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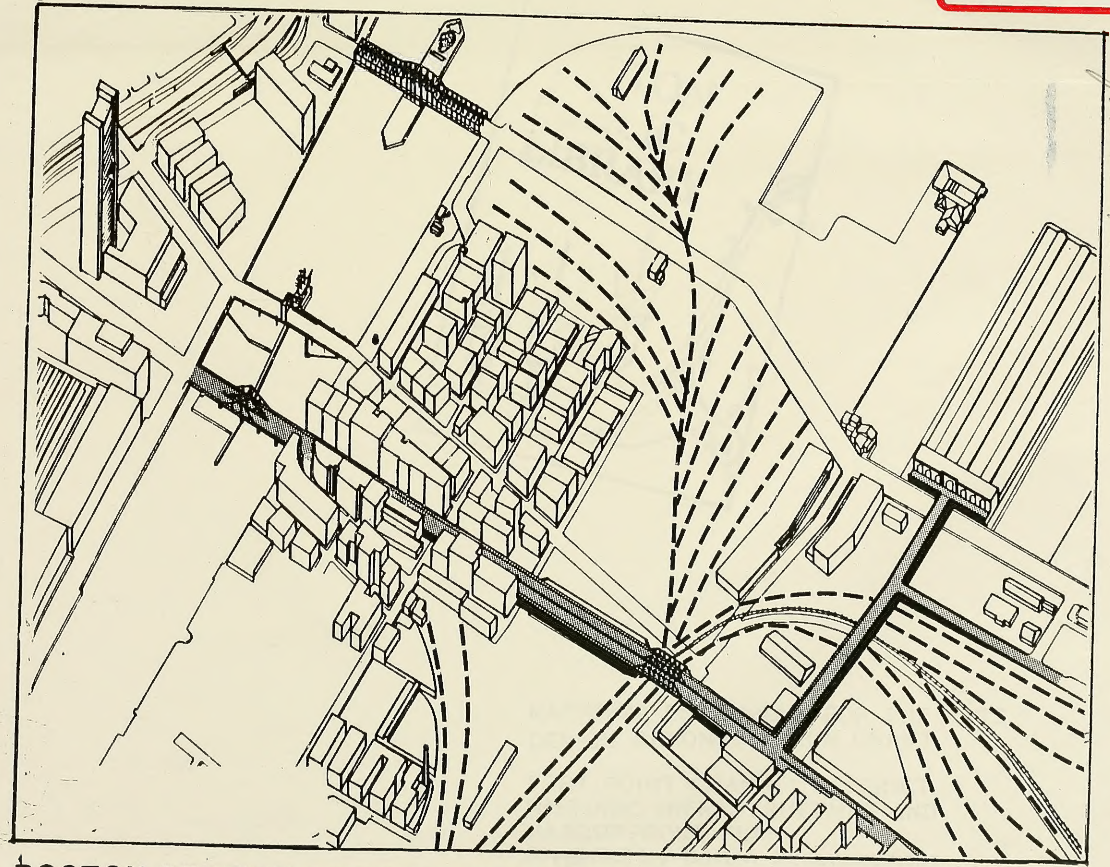

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NATIONAL ENDOWMENT FOR THE ARTS
DESIGN DEMONSTRATION GRANT

FORT POINT CHANNEL DISTRICT
HISTORIC INFRASTRUCTURE AND
HARBORFRONT PLAN
Prepared by Boston Redevelopment
Authority, 1987

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Acknowledgements

The City of Boston would like to express its appreciation to the National Endowment for the Arts for its support of this planning effort. The grant received has made possible the initial analysis for this section of the city which will lay the foundation for continued planning toward its future potential.

Purpose

The primary objective of the study is to investigate the potential of utilizing the existing bridges and viaduct structures in the Fort Point Channel district of South Boston to develop an expanded two-level circulation system.

Study Focus - Background

The Fort Point Channel district developed over time as a transfer point for a worldwide distribution of goods by sea and rail. Recently the two-level infrastructure initially created to prevent transport conflicts has been suggested as a means to organize future infrastructure patterns. This concept of expanding upon a multi-level circulation system to ease the traffic conflicts that future development will cause has expanded the original study.

The original study proposal envisioned an emphasis on the utilization of the existing bridge and viaduct structures and their aesthetic qualities. As the study progressed and area development pressures have accelerated, the original study focus was seen to be short-sighted. A more comprehensive plan is needed for the South Boston Industrial Waterfront Area to encompass not only the preservation and reconstruction of the bridges but also the larger transportation issues and open space, land-use, etc. As a result, the study investigates the applicability of a two-level circulation system within the framework of a more general investigation of this district.

This study is thus a critical first step of a much larger study the BRA will undertake of the Fort Point Channel District. Much of the inventory and analysis required for the NEA study will be valuable for subsequent planning, as will the analysis of the alternatives explored in this document. With this work and upcoming, the ultimate objective will be to produce guidelines by which future development can better respond to its historic context, and public infrastructure can be planned and located to ensure the greatest benefit for the area and region.

As a result of this initial effort the groundwork has been laid and the momentum created for the larger planning effort. For facilitating this, the National Endowments for the Arts Design Arts Program deserves both credit and an expression of appreciation.

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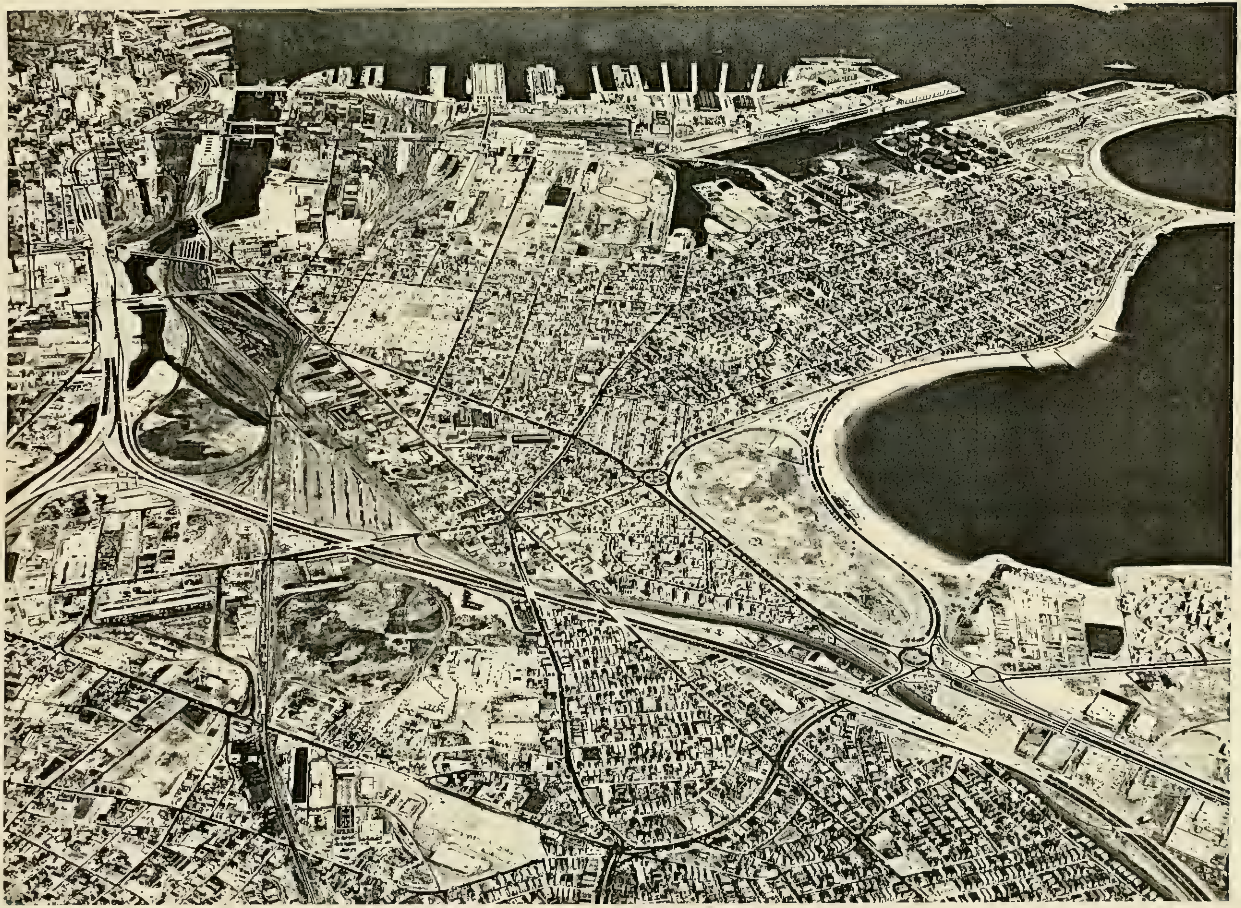
SECTION I

FORT POINT CHANNEL – SOUTH BOSTON
TWO – LEVEL SYSTEM



AERIAL VIEW OF SOUTH BOSTON

1.0 SUMMARY OF FINDINGS

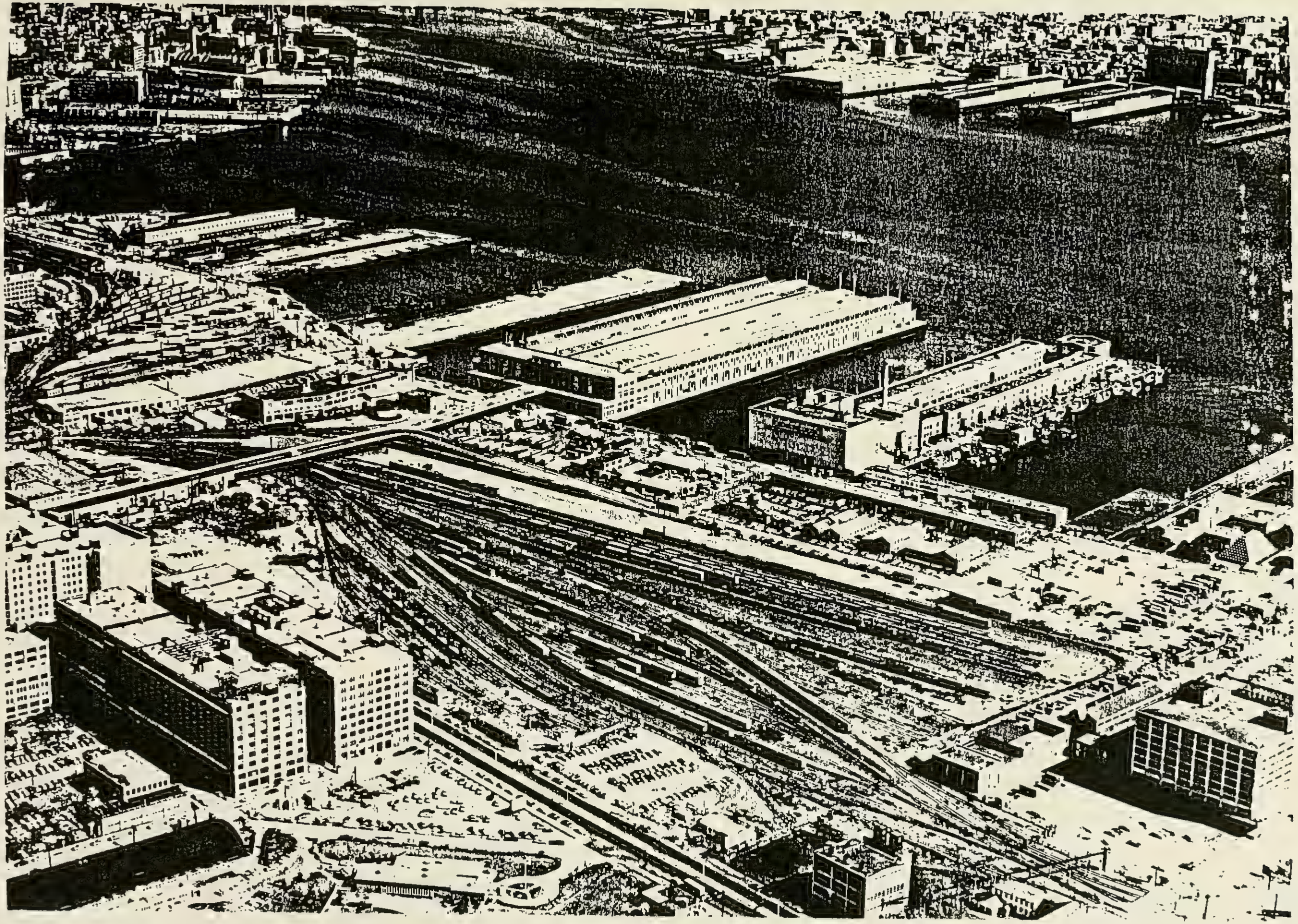
1.1 INTRODUCTORY STATEMENT

Many Bostonians associate the Fort Point Channel area with the several blocks of warehouses immediately across the channel from the downtown core. Beyond their relatively small built up district, stretching all the way to the original South Boston Peninsula, lies an area of under-developed land with as much acreage as all of downtown Boston. Originally marshland tidal flats, the current land forms the product of a series of major landfill operations between 1836 and 1890, with incremental filling continuing to the present day. During the first third of the 20th century, at the peak of port activity, the area was an international center of fishing, wool, ice, sugar refining, manufacturing and distribution of goods. Since the 1940's, with the general decline of maritime, rail and manufacturing activity in Boston, the area has become less intensely utilized and until recently almost abandoned (or forgotten). In recent years, as the pressures for downtown development have spread outward from the core, interest in the area has resurfaced. Today the area is on the verge of massive development and clearly in need of an urban design strategy and policies to structure its impending growth. The opportunity is enormous, with the scale of endeavor and potential impacts comparable to that of the filling of the Back Bay over a century ago.

That is why it is imperative that the study be viewed not as a culmination, but as a catalyst for the undertaking of a comprehensive planning process for the Fort Point Channel/South Boston area.

1.2 STUDY OBJECTIVES

- To explore the opportunities created by the existing pattern of grade separated roadways and the viability of expanding this pattern to enhance the district's character and improve access and movement.
- To establish the foundation for a plan for the South Boston Harborfront. This plan would set guidelines for public and private development primarily to improve traffic conditions, increase pedestrian access to the waterfront and limit impacts on the adjacent community.
- To prepare a comprehensive inventory of existing conditions in the study area and investigate future alternatives for land use, transportation, district character, and open spaces.
- To initiate a process that will guide the development of a plan and its implementation. Special emphasis will be given to meetings and the exchange of ideas and concerns with the different parties involved in such a process.



RAILYARDS & VIADUCT, COMMONWEALTH FLATS 1962

1.3 THE TWO-LEVEL SYSTEM

(GRADE CHANGES)

As has been stated, the evolution of the South Boston/Fort Point Channel District focused on the movement of goods by many modes of transit. The railroads for regional service, the ships for international transit and other surface vehicles for local service created many conflicts. To alleviate some of the problems, Summer Street was elevated over both the rail lines and streets. This allowed surface vehicles, horse and wagon and, later, cars and trucks, to move continuously.

As the railways gave way to trucking and Boston lost its importance as a shipping center, the railyards were abandoned and were not developed partly due to their limited access and a lack of streets. This grade separation of Summer Street and several other roadways cannot really be categorized as a system as it is really fragmented; not complete. It is only a piece of what it could be.

The current status of the elevated roadways is not good. The bridges and viaducts are in need of repair and serve more as an obstacle to movement in the area. Heavy traffic must be re-routed around the structures as they can no longer safely carry the load. These structures are also being threatened with removal to make way for at grade systems that would provide better access to developable lands. Planned construction of a Third Harbor Tunnel is also a threat.

The concept of developing a two-level system of streets for this Fort Point Channel area does have some merit and such a system would have advantages. The construction of New Northern Avenue parallel to Old Northern Avenue, if elevated, could create a pair with Summer Street. It could provide a higher bridge over the Channel to provide continued access and might even connect to Fort hill over the Expressway. Exciting multi-level connections could be created for pedestrians at the cross streets, and some key squares or urban spaces could be designed to enhance the "Beaux Art" perspective of the viaduct to Pier 5. Buildings developed along these elevated streets could have pedestrian/vehicular access above with service and parking, even mass transit below.

The grade separation also provides an orienting function for pedestrian and vehicular movement. The elevated roadway creates views of the harbor which are not possible from the level of Congress Street. These views can provide the impetus for the creation of promontories or urban spaces upon which revitalization and new development efforts can focus.

1.4 BRIDGE NETWORK

The need to provide rail, maritime and vehicular connections from South Boston Harborfront to Boston lead to the development and construction of several bridge systems to ease conflicts. Numerous movable span bridges were constructed over the Fort Point and Reserve Channels where high clearance for shipping was required. The railways required less clearance and inevitably lead to the erection of the many fixed span bridge and viaduct structures found throughout the district. It is on these fixed span structures that the two level system study will focus.

The movable span-bridges, however, are particularly noteworthy because of their unique design and engineering solutions. Not only are there three different types of bridges, swing, bascule and retractable, but there are also different examples of each type. The number and variety of the bridges has created an unique museum of bridge technology. The best examples are the Old Northern Avenue Swing Bridge and the Old Colony Railroad Bridge (bascule type).

The current status of these bridges reveals that they are in poor repair. Most are now fixed span with the exception of the Old Northern Avenue Bridge and the Summer Street Bridge over the Reserve Channel. Some of the structures, such as the Old Northern Avenue Bridge, are to be removed from service and to be replaced.

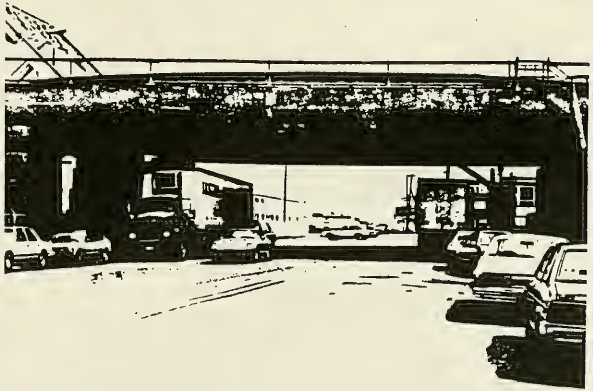
Due to the remarkable number and variety of the structures, they could be utilized for their historic and educational value. A "Bridge Trail" could be created that could be related to other water activities and pedestrian open spaces. This could be coordinated with the City of Boston's Harborpark program to establish continuous public access to the water. Plans are already in the work for the reuse of the Old Northern Avenue Bridge for marine related uses. Reuse or program guidelines for these bridges as well guidelines for future bridges as those planned for future developments would create a museum of bridges for Boston.

Summer Street Bridge Over A Street Bridge

Summer Street over A Street was constructed in 1900. Today the girders need reinforcement to accommodate the dead load of a 1955 slab and the heavy truck live load. Here, the Boston Wharf Company dual levels become evident and are connected by a stairway. As this intersection serves as the 100% corner of the printing industry and the artists community, it would be appropriate to replace the existing stairway with one that is more accommodating, exciting, and symbolic of its purpose. A small loading area at 330 A Street might even accommodate part of a stair tower.

Summer Street Bridge Over B Street

Summer Street over B Street consists of three pin-connected trusses which carry two 25.5 ft. roadways and two cantilevered sidewalks. A minimal repair program would entail reinforcing the flanges but ideally the bridge should be completely reconstructed. Since most of the land below this crossing will be developed at some future date, it seems best to do a temporary fix-up and then plan and design the bridge as an integral part of any future construction. Activities along the second level would help to pedestrianize this important link from South Station to the new World Trade Center.



1.5 RECOMMENDATIONS SUMMARY

The following statements summarize the principle recommendations of this study.

District character

- The existing traces of a two-level system should be given a special attention so as to preserve its unique character while enhancing its potential for relieving the area of some traffic problems. This system can be expanded to deal with the more contemporary transportation problems of parking and servicing and of separating the vehicular and pedestrian circulation.

- An integral aspect of the character of large portions of the study area are the Industrial Age artifacts and infrastructure that permeate the area. Sufficient members of these bridges, wharves, warehouses and rail right-of ways should find means of re-use rather than succumb to more standard contemporary commercial mixed-use developments. For example, the opportunity for connecting the remarkable collection of bridges in the area into a form of environmental/cultural history museum needs much serious reflection.

- Current development pressures being placed on this study area of over 650 acres require the development of a preservation strategy that will maintain and accentuate the uses and physical character for the various sub-districts (such as Boston Wharf, the array of piers, the neighborhoods of South Boston, etc.). A potential problem with such large contiguous land holdings is that a rather homogenous development pattern may occur. This should be avoided, with urban design guidelines developed for each sub-district within the area.

Land use

- Pursue channels for incorporating housing as a major land use component in the area. With the housing shortage likely to remain a major Boston problem, it seems necessary to include housing in one of the last major underdeveloped area with direct proximity to the core. The study area seems well suited for a wide range and mix of housing types, and at quite broad scales of development, from infill to several hundred contiguous units.

- While the few ownerships and large land holdings, offer many advantages for large-scale redevelopment, consideration should be given to reducing parcel and development sizes while incorporating a more frequent (block-size) cadence of streets and public rights-of-way.

Transportation

- To the extent possible, accelerate the environmental review, planning and design for the Third Harbor Crossing. It is the key variable for any large-scale development of the area, and a necessity for rerouting truck traffic away from the residential parts of South Boston.

- In the design of the ramping systems for the Third Harbor Crossing, avoid large and disruptive interchanges. What the are needs from an urban design standpoint is a far less fragmented fabric of streets and buildings. The entry and exit ramps should, to the extent possible, be incorporated into an expanded and improved street network.

- Initiate studies for the incorporation of better mass transit linkage to the area. Several long-range options should go through a feasibility analysis: 1) incorporation of a re-routed Blue Line as part of the Third Harbor Tunnel, 2) consideration of a loop extension of the Red Line through South Boston, 3) exploration of a new (but long proposed circumferential transit loop, perhaps as an extension of the Blue Line that might pass through South Boston on its way to intersect the Red and Green Lines, 4) consideration of eight-rail (or people mover) systems integral with some of the large-scale development proposed along the Northern Avenue and Summer Street corridors, 5) consideration of including one, or several, stops in the area as part of an expanded South Shore commuter ferry system.

- During final planning for the new Northern Avenue and the Seaport Access Road, investigate the feasibility (and potentials) of incorporating and expanding upon the existing 2-level street system in the Boston Wharf District.

Open space

- The precepts and objectives underlying Boston's harbor park system must be implemented throughout the Fort Point and South Boston districts. As large-scale development quite naturally moves toward the edge of piers and water, public access must be protected. It is conceivable that future Bostonians might have continuous access to the Harbor's edge from the Fan Pier to Castle Island and Pleasure Bay. An important part of such an objective would be to find ways of terminating the Fort Point and Reserve Channels which now gradually wither away into mud and sewage dumps.

- Given that the majority of the study area is landfill, the opportunities for reclaiming more water for recreation, open space and even transportation should be studied. The current proposal for a canal as part of the Fan Pier development might become more pervasive as a system of waterways if incorporated into other developments in the area.

- A map of Boston clearly reveals that the emerald necklace, were it to gain a 'clasp', would go right through the Fort Point Channel/South Boston area. In planning for the development of an area the size of the Shawmut Peninsula, the role that parks (both neighborhood and regional in scale) could play must be considered.

2.0 BACKGROUND INFORMATION

2.1 DEFINITION OF STUDY AREA

The Summer Street corridor, which is the focus of this study, extends through industrial South Boston which is comprised of 700 acres of land. This area is comprised of several subdistricts: the area to be developed such as Pier 1 to 7, CC&F/McCourt land and Massport-Commonwealth Flats; the areas to be affected by the transportation improvements; the areas likely to be preserved such as Boston Wharf Historic District, Fort Point Channel movable span bridges, the two-level system and other distinctive buildings; the underdeveloped land such as the South Boston Industrial Park; and the currently active light manufacturing areas such as Gillette Park, EDIC-Boston Marine Industrial Park, Edison, Texaco, etc.

This area has no clear boundaries and although it is referred to in several different ways (some of which have been enumerated above), it is generally called the Fort Point Channel Area. Given that the study will focus on the area extending from the Fort Point Channel to the Reserve Channel and the fringe of the South Boston Residential neighborhood, we will refer to the area more appropriately as the South Boston Harborfront.

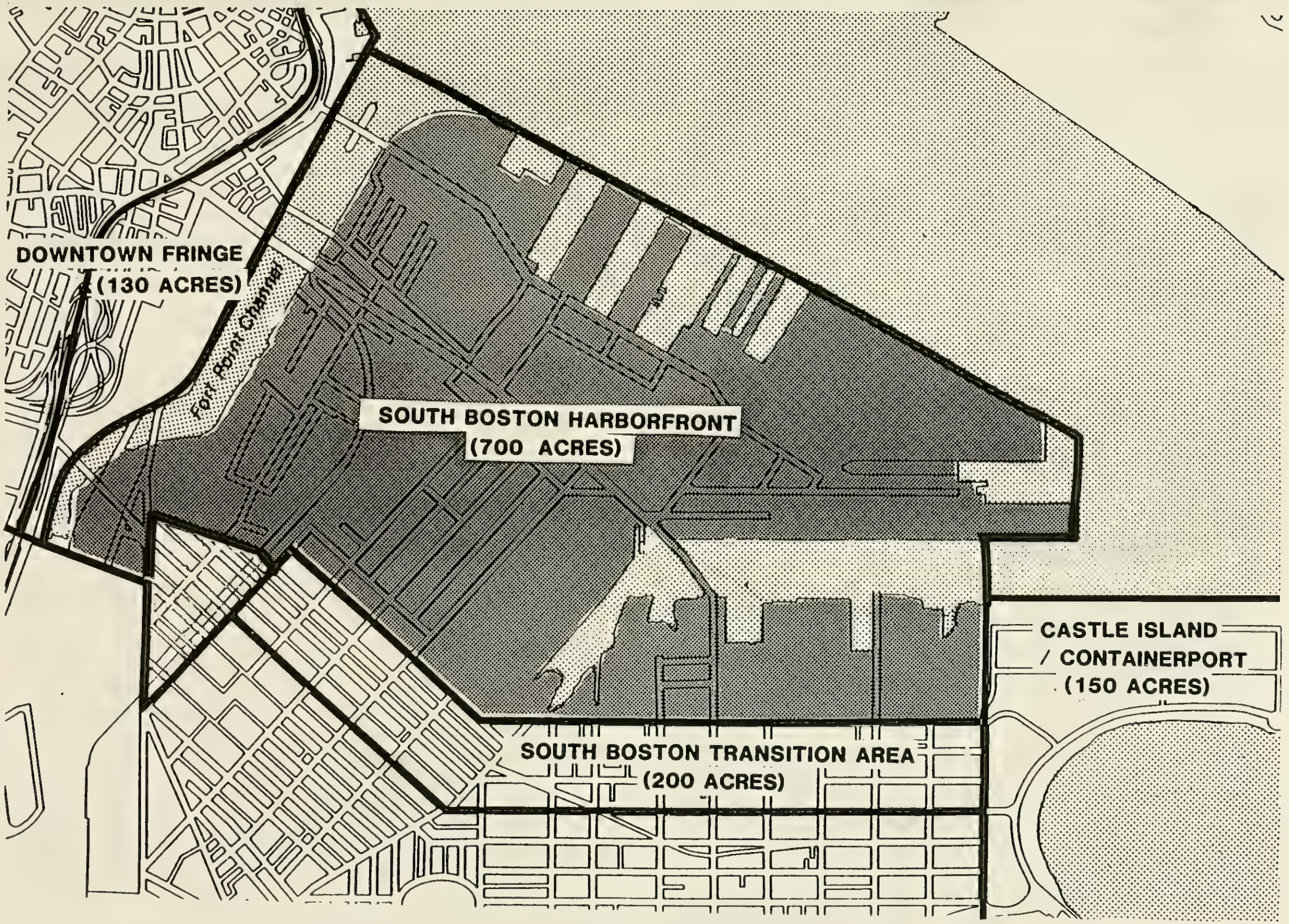
The Study Area is surrounded by 4 main adjacent areas:

- Downtown Fringe: Approximately 130 acres of waterfront land that is facing extensive transformation. The Harborpark* plan and eight miles of Harborwalk will include the study area waterfront. South Station has a $200 million proposal for a transportation center, hotel, offices and retail. Rowes Wharf $190M. complex of residential units, office, hotel, retail and marina that will be completed in 1987 and the proposal for the depression of the Central Artery.

- South Boston Transition Area: 200 acres of land that comprise of 40 blocks of residential South Boston that have been infiltrated with light manufacturing and warehousing. This area has to be considered in the study as a transition-buffer area so as to protect the existing residential areas in South Boston from truck traffic and changes in land-use.

- Castle Island-Containerport: 150 acres that include the Massport's Containerport and the Castle Island-Pleasure Bay open spaces and recreational areas.

- Boston Inner Harbor: The study area has approximately 4.5 miles of waterfront, of them more than 40% are Harborfrontage. Water transportation is a growing mode of transportation that eventually will bring back activity to the harbor and docks by the South Boston Harborfront piers.



SOUTH BOSTON HARBORFRONT STUDY AREA

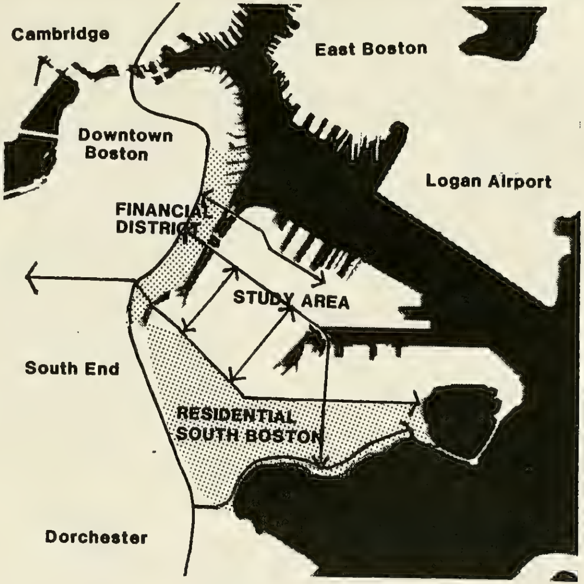
2.2 PLACE IN THE CITY

Context

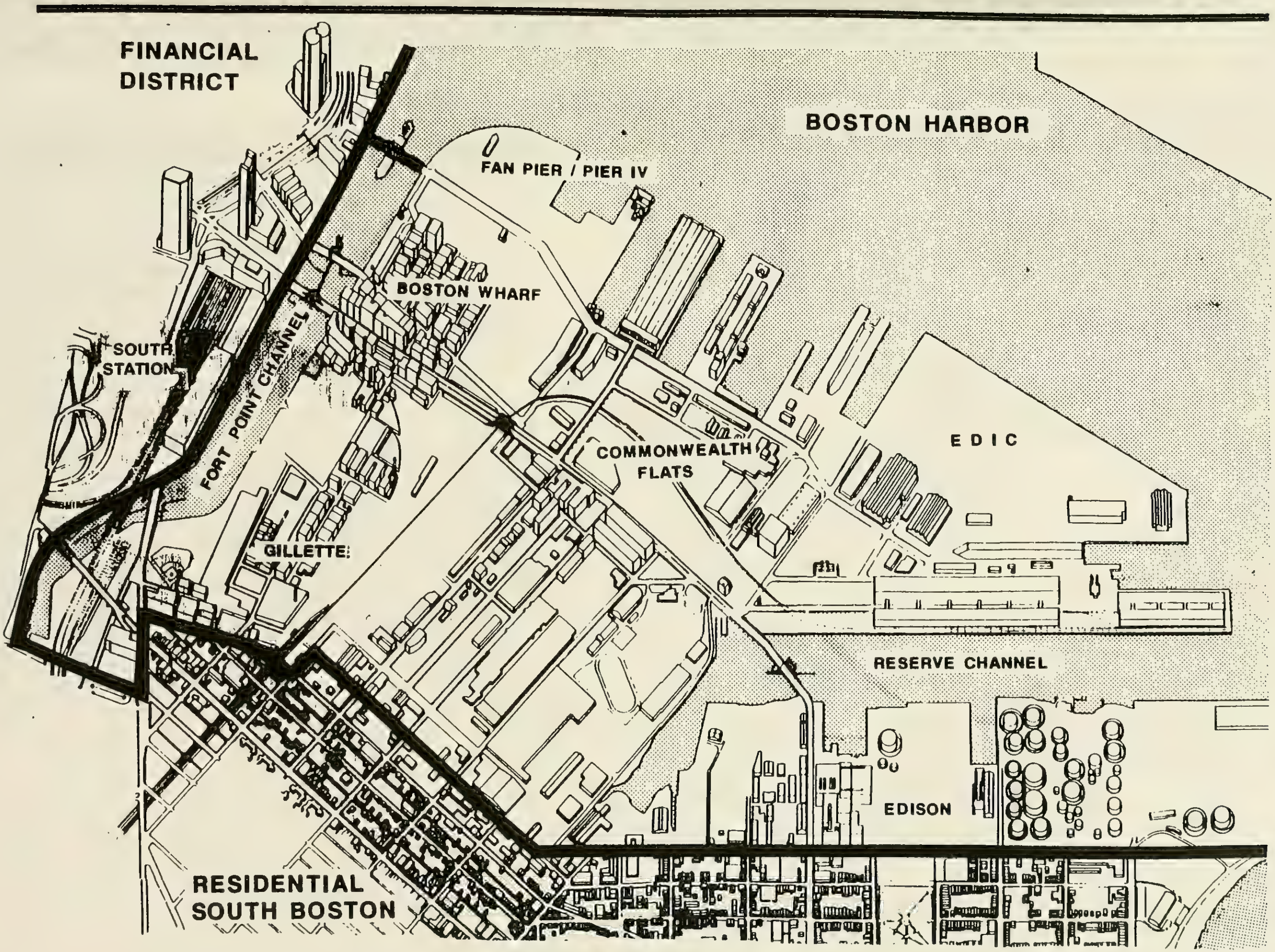
The so-called Fort Point Channel Area, in fact, comprises 700 acres of the South Boston Harborfront. It is surrounded to the West by the Fort Point Channel-Financial District, to the Northeast by the Boston Harbor and to the South by the South Boston Residential community.

Downtown Boston - Business District: A strong influence over the proposed developments for the study area has been its close relation to the Business District of Downtown Boston. Though linked by only 3 bridges to the Shawmut Peninsula, the pressing need for the provision of new office, retail and hotel space has crossed the Fort Point Channel and starts to shape the proposals for the existing underdeveloped land. South Station provides excellent accessibility

Boston Harbor: The South Boston Harborfront has a unique perimeter of Waterfront - Fort Point and Reserve Channels - and Harborfront to the Boston Harbor. The once very busy Harbor that filled the piers of South Boston with ships, railroad tracks and trucks due to a change in the economy and modes of transportation has left most of the waterfront and Harborfront abandoned. The real port of Boston is the Logan Airport just across the Harbor in East Boston. Nevertheless, the Harbor offers enormous potential for the future development of the Fort Point Channel study area.



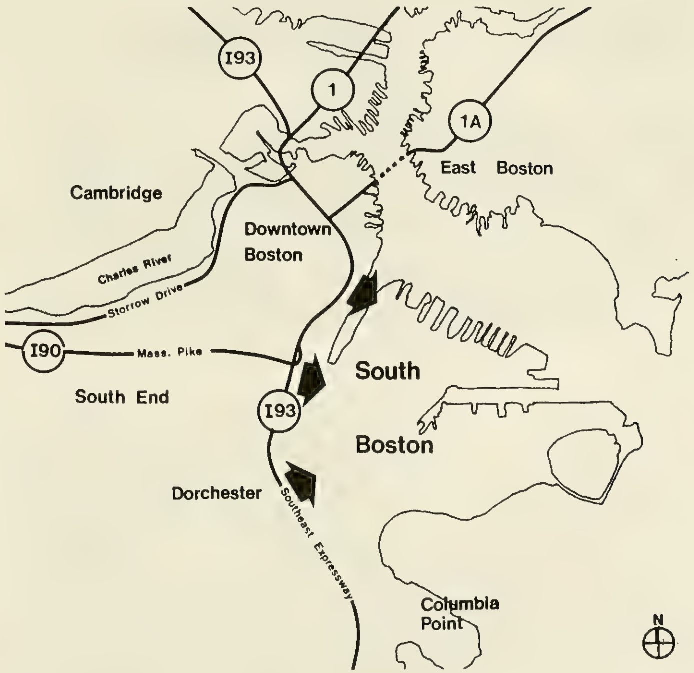
South Boston Residential Community: Though losing almost a third of its population between 1950 and 1970, South Boston is today a stable middle income neighborhood with a population of 31,300. 54% comprises the labor force and, of them, 25% works within the neighborhood and 19% in Downtown Boston. 34% of the labor force uses public transportation to work, 32% drives alone and a significant 19% walks to work. The majority of the 14,170 housing units are predominately of wood construction and were built prior to 1939. South Boston includes some citywide relevant places such as the Historic Dorchester Heights, Castle Island, Pleasure Bay, Carson Beach and Columbus Park.



SOUTH BOSTON HARBORFRONT / FORT POINT CHANNEL AREA

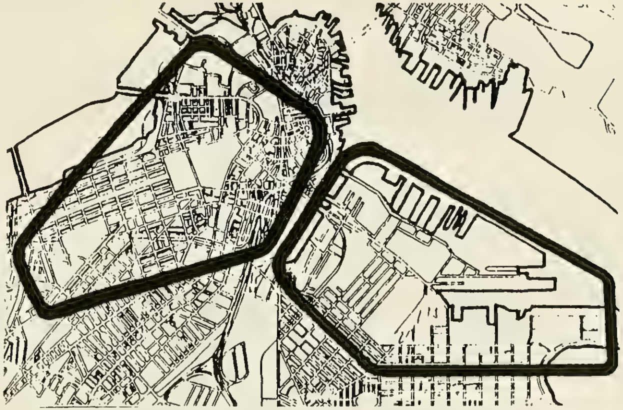
Regional relations

Though advantageously located, this peninsula-shaped area has only a few connections to mainland. 3 bridges connect to Downtown Boston including the Old Northern Avenue movable span bridge and only a few streets connect to the south wandering through the existing residential neighborhood. Most of these connectors to the area suffer severe traffic congestion during peak hours. Beside this congested fringe area, accessibility is very good. The Southeast Expressway (I-93) and Mass. Pike are just outside the area limits facilitating connections to the North, South and West. The proposed depression of the Central Artery will further improve regional connection. The Third Harbor Tunnel will improve connections to Logan Airport and ease access to the Southeast Expressway. The area's proximity to the Harbor, to the intersection of I-90 and Route 3, to the downtown core, and to the South Boston neighborhood create a diverse set of development pressures and opportunities which, through planning, can complement rather than conflict with one another.



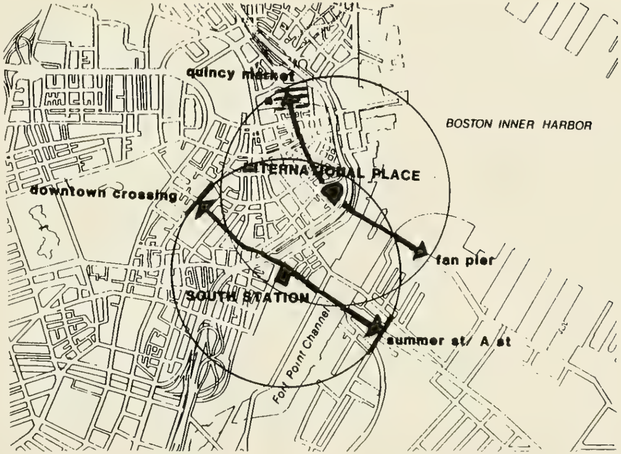
Scale comparison

In planning for and guiding development in the Fort Point Channel Area District, the first considerations regard the district's scale and place in the city. The 700 acres of the Fort Point Channel area correspond in area to the entire Downtown Boston. While Downtown Boston is extensively developed, the study area has vast parcels of industrial land, much of which is vacant or underdeveloped.



Distance comparison

Distance is a very significant characteristic of the study area. First it shows how close the study area is to the business district (the diagram on the right shows that the distance from South Station to Downtown Crossing or to the core of the Boston Wharf is the same), and second, by showing how large the distance from one point to another of the South Boston Harborfront can be. (The Fan Pier - Pier IV distance equals to the crossing of the Boston Common, or that the Fan Pier-Subaru operation distance equals the distance from the Public Gardens to the Northern part of the North End).



3.0
ELEVATED TRAFFIC SYSTEM

3.1 INTRODUCTION

The Elevated Street System

A unique characteristic of the study area is a partial system of grade separated streets. A long section of Summer Street and Viaduct Road leading to Commonwealth Pier are elevated above normal grade. They are virtually continuous bridges which span over the network of nineteenth century railroad yards that criss-cross the study area. These elevated sections were originally built to separate commercial and railroad traffic by limiting the number of intersections between two modes of transportation. At the height of the area's use as an industrial, warehousing, and rail-transfer center, the sheer magnitude of railyards and frequency of trains made other forms of transportation (pedestrian, horse-drawn and mechanical) increasingly dangerous and congested. Elevating Summer Street, its connection to Commonwealth Pier, was thus a logical and pragmatic solution. Although there are for fewer trains entering the area today there are still potentials for using and extending this two-level system.

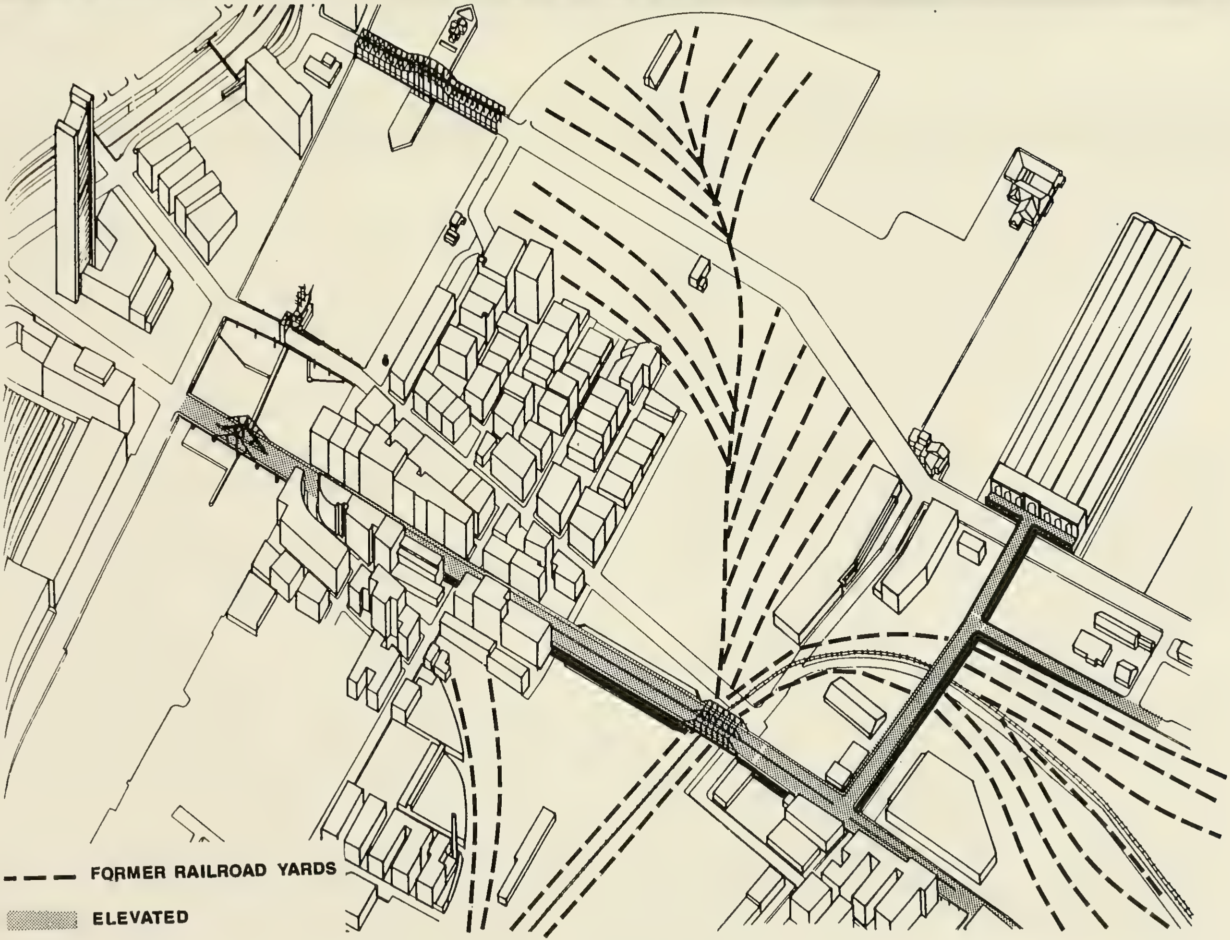
USE AND CONDITONS

The current status of this fragmentary system is poor, as are its prospects. Most of the bridges are in need of repair. Today heavy truck traffic has been rerouted because of this. (This rerouting, however, adversely affects residential sections of South Boston.) The connections between the upper and lower sections are also badly maintained, unsightly and too infrequent. Some of the areas beneath the elevated portions of road are merely used for refuse. Finally, some projects currently being proposed (such as the MassPort proposal for Commonwealth flats) threaten to eliminate portions of this system.

POTENTIALS

Before this is allowed to happen, consideration ought to be given to upgrading and re-using the system. Such a separation of streets may again prove necessary as the area undergoes large-scale development; as traffic pressures intensify; as the Third Harbor Crossing is built; and as new conflict between parking, service and normal traffic, between through and local traffic, between automotive and buses traffic, and between pedestrians and vehicles rise. What currently seems an outmoded bit of industrial infrastructure may help alleviate some of the impending traffic problems in the area. Furthermore, its presence is an important element of the physical characteristic of the area.

The following pages examine several potentials for re-using and building upon the existing systems, indeed for concerning it as a system of local transportation for the area.



SOUTH BOSTON: EXISTING TRACES

3.2 HISTORY

The area at the turn of the century was a center for rail facilities which had begun operations in the 1840's. The combination of shipping, docks and wharves, and rail facilities supported this area as the heart of Boston's industrial waterfront. At the same time, Boston was losing its pre-eminence as the nation's major harbor, gained during the Clippership Era, to New York. This shift changed Boston from an active mercantile port to a center for steamship lines and railroad ferry terminal. Much of this activity occurred in the banks of the Fort Point Channel.

By 1900, South Station was completed, uniting all southerly railroad lines under one roof. This terminal further contributed to the continued growth of the adjacent leather district and other manufacturing/warehousing activities on both sides of the Channel.

The Channel reached its height of port activity in the early 20th century. Boston's fishing center relocated from the Great Cove piers to South Boston, near the mouth of the Channel. The wool and ice industry had their warehousing and distribution center here as well. A major sugar refinery was located directly on the Channel at its curve. The Boston Wharf Company warehouses served as a distribution center for the sugar molasses concerns as well a lumber, coal, bananas, and leather. South of the wharves grew a manufacturing center. Machinery, iron, glass, brickyards, wagons, soap, elevators and beer were some of the varied products manufactured here, and distributed via the Fort Point Channel rail and shipping facilities.

The earliest route connecting the Boston Wharf property with downtown Boston was the Congress Street Bridge, erected in 1878. Congress Street, originally (Easter Avenue), was laid out across the mud flats and in 1892 crossed the Reserved Channel on what is today the L Street Bridge. The presence of the railroad yards however, made this route a hazardous one, and in the 1890's, as part of the general movement to eliminate grade crossings, Congress Street was terminated at the yards.

In the meantime, the development of Boston Wharf property set in motion by the Congress Street Bridge had accelerated. By 1900, a solid wall of masonry lined Congress Street as far as the yards.

To eliminate the hazardous grade crossing of Congress Street at the railroad yards, the Legislature authorized in 1896 a new route, extending Summer Street across Fort Point Channel. Because of the heavy traffic in teams expected to the state's docks, the route was designed to reduce the grade required to an absolute minimum. A stone and steel viaduct was built by the city from Fort Point Channel over A, B, and C Streets to the edge of the railroad yards. The New England Railroad itself was charged with erecting the bridge over its own lands.

The bridge, completed in 1901, was built by the Edge Moor Branch of the American Bridge Company according to the designs of the railroad's engineering department, William H. Moore, bridge engineer.

Commonwealth Pier was constructed in 1900 by the Board of Harbor and Land Commissioners and in 1912 a super structure was erected on it consisting of three parallel sheds running its full length of butting into a four story headhouse. Reflecting the separate freight and passenger access, the headhouse consisted of a two story base for freight traffic with a ramp from the Summer Street viaduct providing access to the third floor passenger level. This viaduct functions as a grand axis to the Beaux Arts facade of the headhouse and is accessed by vehicles on its Northern Terminus via Ramp Street.

In 1804, South Boston was annexed, and legislation was passed to allow landfill to create land for commercial development. The South Boston Bridge, also known as the Dover/West Fourth Street, was opened as a fixed span/drawbridge in 1805, the first of nine bridges to span the South Bay.

In 1805, the Front Street Corporation began landfill operations in South Cove, beginning the expansion of Boston Neck. In 1833, the South Cove Associates continued development of the South Cove by filling 75 acres of mud flats for a large railroad terminus for the Boston and Worcester railroads. The western shore of the Cove was substantially completed by mid century.

In 1836, the Boston Wharf Company began its series of landfill operations along the east bank of the South Cove, between Dorchester and Northern Avenues. By the 1870's their reclamation had narrowed the waterway and established the eastern bank of a channel. Around 1870, dredging operations began in the Channel itself, to accommodate the larger vessels berthing in Boston. By 1890 the Boston Wharf Company filling operations were completed, and the Channel was protected by a seawall. The company had continually constructed docking facilities and warehouses and streets to serve their thriving industrial development.

Locally, other factors contributed further to the Channel's decline. The Mass. Turnpike and Southeast Expressway made trucking cheaper in the Boston area than rail. The Central Artery (1959) cut off the Leather District, South Station and Fort Point Channel area from Central Boston. The remaining South Bay was completely filled in by the 1960's negating the previous need for the Channel to remain open as a waterway. Dorchester Creek and the Roxbury Canal were culverted and emptied into the end of the Channel. The reclaimed South Bay became the location of the Southeast Expressway (1959), the incinerator (1958), the New Boston Meat and Poultry Market (1969), maintenance facilities for the MBTA and City (1970's), and the railroad yards.

As the wharves became unused, much of the Channel's shoreline was replaced by non-maritime uses. The Gillette plant replaced the American Sugar Refinery operation on the east shore, and the United States Postal Service built a regional headquarters on the western shore.

During its later period, the movable span bridges over the channel were transformed because water access was no longer required. Most bridges, when replaced or refitted were done so with a fixed span type to reduce congestion for the commuters and manufacturing firms which depended upon them for connection to Boston.

The Fort Point Channel's role as a shipping and distribution center began its decline by the 1940's. The wool industry was then severely threatened by the invention of synthetics. this also marked the beginning of the general decline of the New England region for manufacturing, as companies either went out of business or moved south and west, both a result of high energy costs and drying up of cheap labor previously supplied by immigrants. The Fort Point Channel area began to serve regional, rather than international, markets. Some of the once busy Boston Wharf Company warehouses were razed and made into parking lots. And, as trucking and air freight out paced rail and shipping, the Fort Point Channel's advantages as an intermodal distribution point was lost.

LANDFILL HISTORY OF SOUTH BOSTON

3.3 SOUTH BOSTON/FORT POINT

CHANNEL HARBOR -- HISTORY

What is presently the Fort Point Channel area was, until the early 19th century, marshland and tidal flats. Its western shore was known as South Cove, and to the east was known as Dorchester Flats. These shores led into the South Bay, which extended to Roxbury and terminated in the Roxbury Brook and Dorchester Creek. South Boston was an underdeveloped area with ten families. Boston Neck and Roxbury, which made up the western shore of South Cove, were defence areas for Boston Proper during the Revolution, but was most important as the only roadway to the mainland.

"Boston by the late 19th century, was laced with a complex network of channels, canals and river entrances. The intersection of these busy waterways with an expanding road network developed on filled land created the need for scores of moveable bridges throughout the city. Travel in almost any direction from center of the city was often interrupted by the operation of these devices, which were a common feature of the waterfront. By the early 20th century eight such bridges crossed over Fort Point Channel to serve new development in South Boston. The importance of these structures can be judged by the fact that during the 1890's, nearly 19,000 vessels, steamers, sailing boats and tugs passed through the Congress Street Bridge carrying cotton, molasses, spices, wood, dye, fruit, shoes, and cattle, among other cargo. The seven which remain today include:

<u>Dover/West Fourth St</u>. -- The earliest bridge route to South Boston was first built in 1805. It was rebuilt again in 1858 and the present structure dates back to 1876; it consisted of a fixed span and a simple drawbridge. Today, only the fixed portion remains.

<u>Broadway</u> -- first built in 1871, later replaced by a swing bridge in 1914.

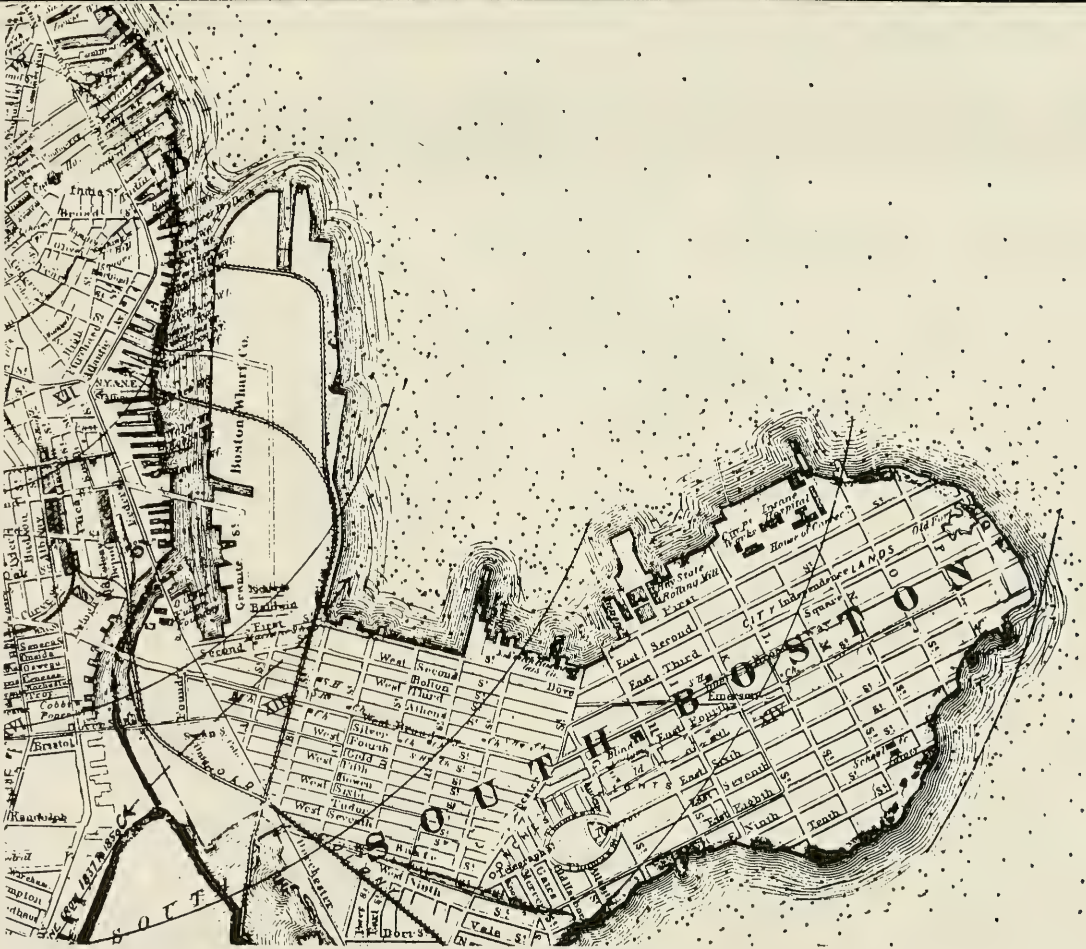
<u>Old Colony RR</u> -- an 1886 drawbridge, later replaced by the rolling bascule bridge now servicing South Station.

<u>Dorchester Avenue</u> -- originally a retractable bridge, now fixed in place and owned by the US Postal Service.

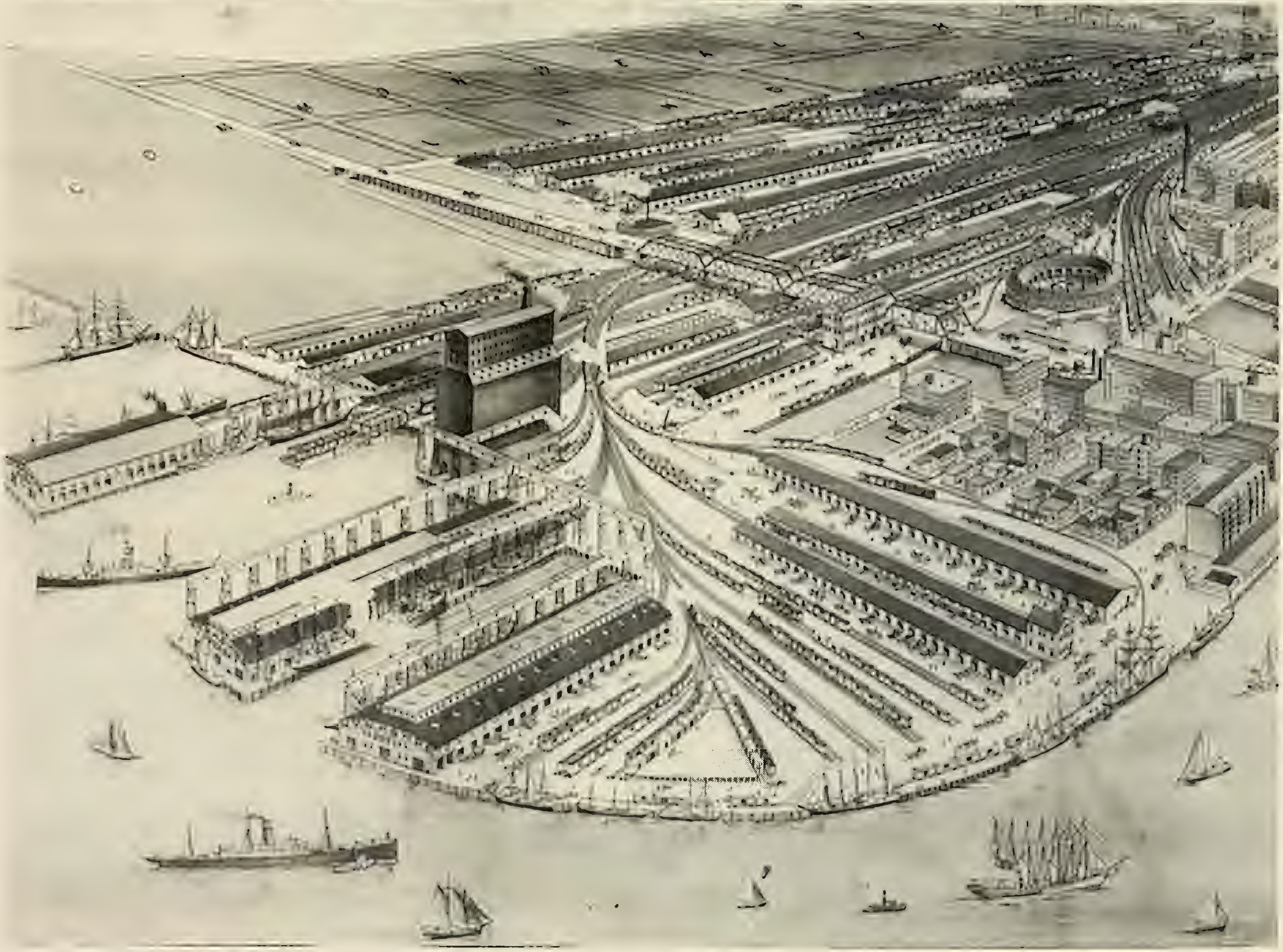
<u>Summer Street</u> -- originally a railroad bridge, replaced in 1898 by a retractable bridge, where the current Summer Street was constructed. The retractable bridge type was a design unique to Boston and used t many locations. Today, only 2 remain: at Summer Street, which has been fixed in place, and further along the same route at L Street in South Boston, which still operates.

<u>Congress Street</u> -- a single leaf bascule bridge, built in 1930 to replace an earlier draw bridge. The current structure contains elegant light standards; its counterweight still hangs poised over Congress Street, although the bridge has been fixed.

<u>Northern Avenue</u> -- a 1908 swing bridge of steel and concrete; the last route across the channel to be opened to traffic".



SOUTH BOSTON 1886



ELEVATED SUMMER STREET AND BRIDGES OVER THE RAILROAD YARDS 1903

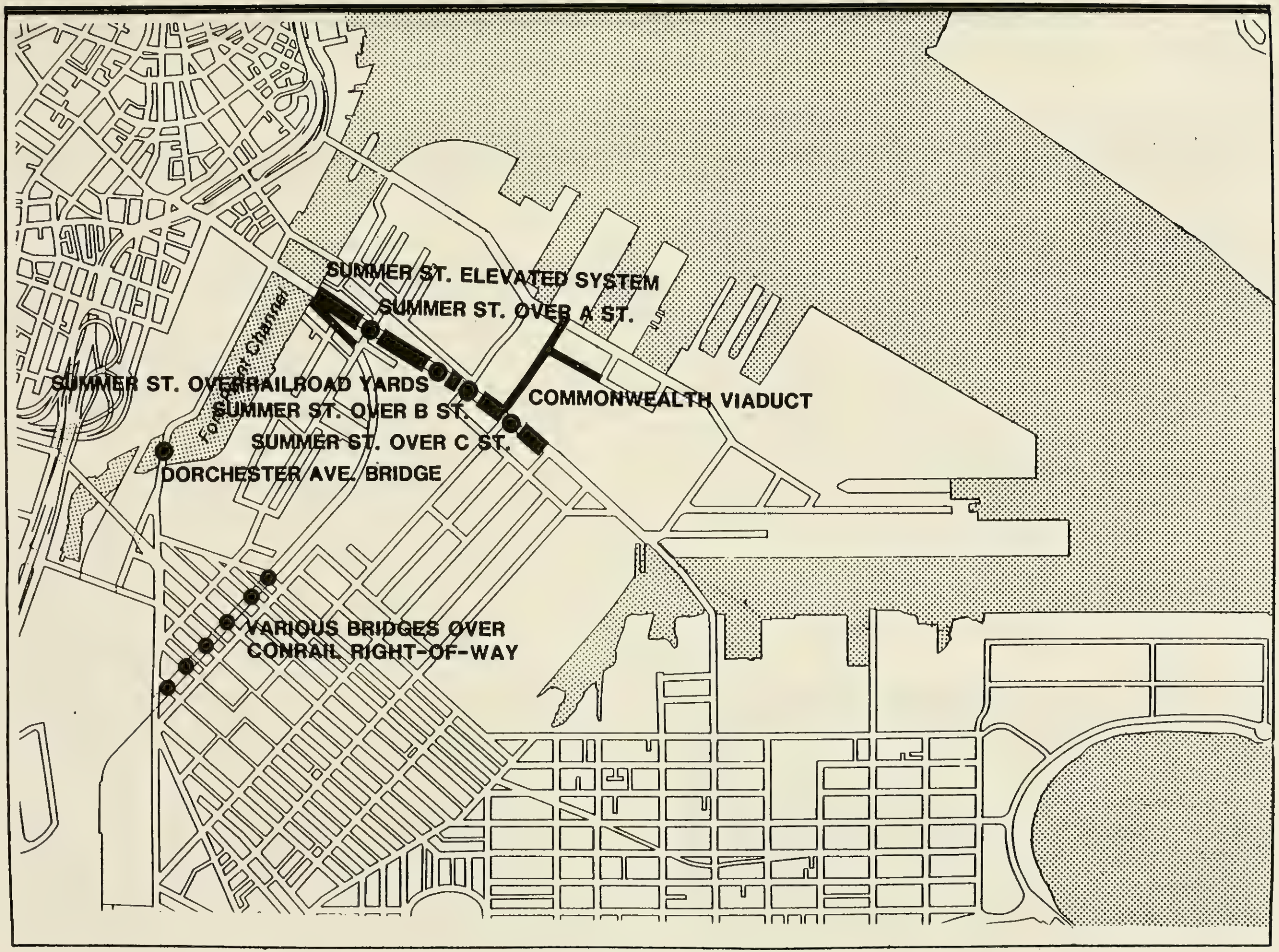
3.3 FUNCTION AND PHYSICAL CHARACTERISTICS

As realized, the elevated system is comprised of two "legs": the Summer Street leg which begins at the channel and proceeds easterly towards South Boston and the Viaduct Street which runs north-south and connects the Commonwealth Pier to Summer Street. This configuration of elevated street layouts allowed railway operations to be uninterrupted by vehicular traffic, and vise-versa, below Summer Street in the north-south direction and below the Viaduct Street in the east-west direction. The two "legs" of the system are made up of roadway segments of varying lengths.

- Summer Street - Elevated viaduct; fixed-span bridge structures; and a ramp.
- Viaduct Street - Elevated viaducts and a ramp.

Summer Street & The fixed span bridges

The Summer Street portion of the elevated system rises gradually at the Fort Point Channel to a height of 22 feet above grade and establishes the elevated first floor for the loft buildings adjacent to it while allowing building servicing to take place below the roadway, at-grade by either rail or truck. As Summer Street extends eastward it provides only one ramp to get down to grade (Melcher Street), along its entire elevated length until the street itself ramps back down to grade further to the east as it approaches the Reserve Channel. The elevated segment of Summer Street varies in physical character along its length. The first variation occurs just beyond the wharf district where the roadway is at a consistent height above grade. Here the earth is bermed up to its underside with two concrete endwalls providing additional structural support. The second variation occurs adjacent to the first and is characterized by three pin-connected trusses that comprise a bridge structure over the railyards and B Street below. This bridge spans 710 feet and is approximately 18 feet above the tracks below. The need to cross the tracks eliminating the conflicts between rail traffic in one direction and vehicular traffic in another warranted a bridge structure of some type.



ELEVATED TRAFFIC SYSTEM AND FIXED-SPAN BRIDGES

THE FIXED SPAN BRIDGES

There are six Summer Street bridges connecting the northern industrial section of South Boston to the regional highway network. Five of these bridges are owned by the City and have been analyzed recently to determine needed repair. The sixth, over the Conrail tracks, is owned by the Commonwealth of Massachusetts. It requires no remedial work. Deteriorated conditions have resulted in reduced load capability for some of these structures. As a result, heavy trucks must detour to other streets causing congestion and safety hazards on those other streets.

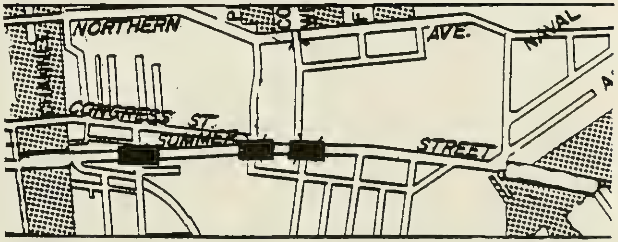
Three of the bridges, A Street, B Street and the bridge over the Fort Point Channel all have a deadload problem necessitating slab or deck replacement. The bridge over C Street has a similar deadload problem by the proximity to the viaduct constrains the pavement stripping option and necessitates total bridge reconstruction.

The Reserved Channel Bridge needs additional stringers, and repairs to the grid would eliminate the current problem of grid damage caused by heavy trucks.

City bridge consultants have recommended a program of minimal repairs to the City-owned Summer Street Bridges to increase their loading capacity to allow 36-ton loads carried in five-axle vehicles. The estimated cost for this work is $1,100,000.

Projections of traffic volumes to the Year 2000 indicate an 80% increase in trucks using Summer Street based on new development activities in South Boston and ordinary traffic growth. This clearly indicates the need to insure the Summer Street bridges are adequate to accommodate these trucks, many of which will be carrying heavy cargo.

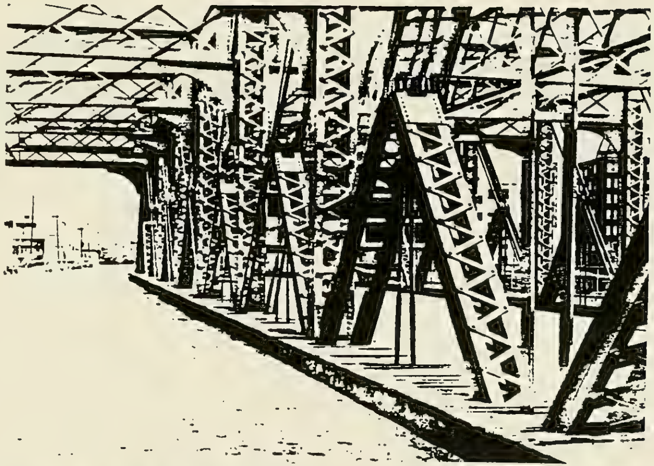
The repair of the bridge over ConRail should be planned mindful of the possibility of a new Spine Road being built in the Conrail Yards connecting Northern Avenue to West First Street. Such a road will need adequate clearance under the Summer Street Bridge. Thus, some grade adjustment may be required in the bridge.



INTERSECTION OF SUMMER ST. AND A ST.

Summer Street Bridge Over Railroad Yards

To eliminate the hazardous grade crossing of Congress Street at the railroad yards, the Legislature authorized in 1896 a new route, expanding Summer Street across the Fort Point Channel. Because of the heavy traffic in teams expected to the state's docks, the route was designed to reduce the grade required to an absolute minimum. A stone and steel viaduct was built by the city from Fort Point Channel over A, B, and C Streets to the edge of the railroad yards. The New England Railroad itself was charged with erecting the bridge over its own lands.



The railroad bridge is a four-span steel Baltimore truss 710 feet in length. Each span is made up of three pin-connected trusses 18 feet above the level of the tracks. The bridge, which was completed in 1901, was built by the Edge Moor Branch of the American Bridge Company according to the designs of the railroad's engineering department, William H. Moore, bridge engineer.

Summer Street Bridge Over C Street

The 100 ft. wide Summer Street over C Street is 65' long. It is damaged extensively and in need of total replacement. When funding is allocated, it would be C Street, Summer Street, and the Viaduct that will provide the vital connections to the new World Trade Center

o Peter Stott, Massachusetts Historical Commission

Viaduct Street

The Viaduct Street provides the other "leg" of the elevated system. It intersects Summer Street at the point where C Street dead ends below. From there it proceeds at a constant height above grade in a northerly manner as it terminates at the Northern Avenue-Commonwealth Pier intersection. The roadway itself has a slight curve in it with the only other ramp from the system (Ramp Street) occurring at this point. Since the railyards curved around to the east after passing underneath Summer Street and approaching the harbor, it is presumed that this leg of the elevated system alleviated any at-grade conflicts between traffic and trains.

EXISTING TRAFFIC PATTERNS

The elevated roadways of Summer and Viaduct Streets along with their connecting bridge structures together comprise a major portion of the Fort Point Channel traffic network today. Summer Street, which parallels Northern Avenue about a quarter of a mile to the south, carries the highest volume of commercial truck traffic of any street in the Fort Point Channel area. It also serves as the major vehicular route to and from downtown and the South Boston residential district. Summer Street itself offers only limited access along its entire length and as a result intersects with few streets. Only Melcher Street provides access to the elevated portion of the roadway within the wharf area while access is provided by smaller local streets in the industrial areas at the eastern end near the Reserve Channel. Since the elevated portion of Summer Street crosses only a few streets and serves commercial buildings at its western end, it could be characterized primarily as a connector street.

The elevated Viaduct Street at present carries a small amount of traffic. This is due primarily to its dead-ending at the upper level of the Commonwealth Pier. Given this fact, the roadway only offers one means of descent to grade and is used primarily as a priority road for the Commonwealth Pier. The roadway itself appears to be in good structural condition and is not in need of major repairs at this time.

The entire elevated system can be said to function as a continuous bridge, the same as it did at its inception. However, today the roadways experience considerably higher volumes and different types of traffic and the railyard operations have all died out. Since the railyards have seen their decline, one may consider the elevated system obsolete given traffic demands in the area today. But it is precisely this fact that supports the notion of integrating the existing system with new roadways in the area, possibly extending it to form a true two-level system. Since the beginnings already exist, comparisons can be made with systems in different cities where exists vertical separation of movement patterns. Since the conflict with at-grade rail traffic no longer exists, the opportunity is available to plan the railyards with a new street network. In this manner the area can build on its multi-level functions and traffic and pedestrian operations.

THE VIADUCT AND THE COMMONWEALTH PIER

3.4 PRECEDENTS IN MULTI-LEVEL SYSTEMS

Introduction

The earlier chapters revealed how the basic conflict between east-west expansion and the massive north-south railroad yards to the east of the warehouses led to the development of the two-level system. The raised Summer Street was not just an isolated viaduct, its bridges and ramped approaches were lined with buildings, taking advantage of the two level access. In effect, the City and the two private powers, the Boston Wharf Company and the railroads, combined forces to create a street with its own architectural identity, a street still powerful in the cityscape today.

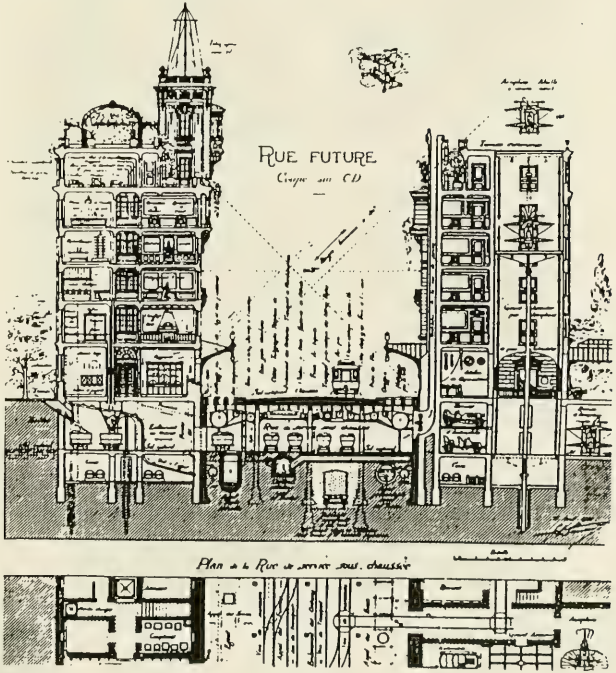
The following examples are introduced to show how the integration of infrastructure and buildings in the city's development, with public and private influence, has been conceived and implemented in the past. The examples deal particularly with the development of two-level systems where high density urban centers required useful integration of buildings and services at all levels of the urban infrastructure.

Paris: Street of the Future

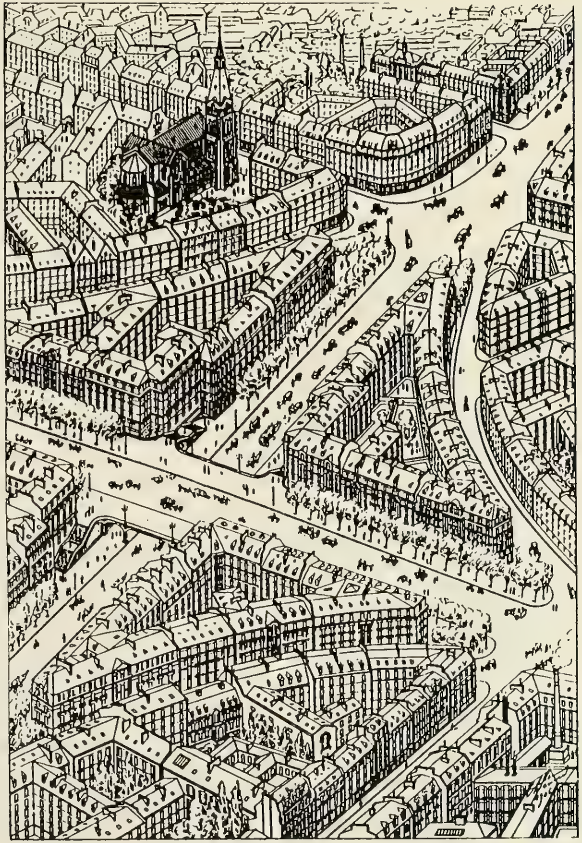
In his 'Etudes sur les Transformation de Paris, Eugene Henard, an architect working for the French government at the time of the World's Fair of 1900, proposes a series of interventions, both for Paris and the city of the future in general. In his diagram of the 'Rue Future', he proposes to build a 'bridge roadway' which integrates all necessary services in a parallel road below.

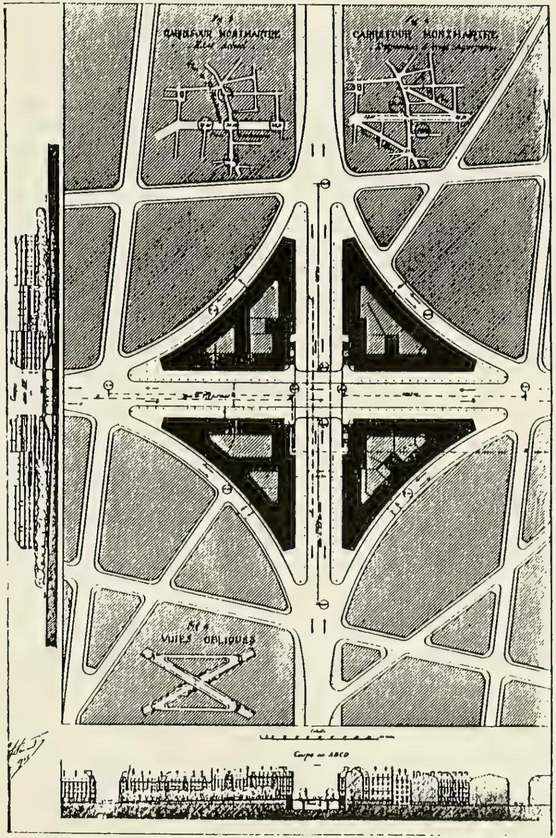
> All of the evil arises from the old traditional idea that the bottom of the road must be on a level with the ground in its original condition. But there is nothing to justify such an erroneous view. As a matter of fact, if I were to establish as a first principle the idea that the pavement and carriage-way must be artificially constructed at a sufficient height to allow thereunder a space capable of containing all the installations needed for the service of the road. The difficulties I have just pointed out would disappear altogether...[1]

It is important to note that while the idea of the street was quite revolutionary, the idea of the architecture was not. The experience of the street was normalized by conventionalized access systems and state-of-the-art building. A further drawing of Henard's of a two-level intersection within the city is highly suggestive of the spirit in which the two-level system of the Fort Point Channel was built. While the plan of the interchange itself is almost like that of a super highway, the image of the project carefully reproduces typical Parisian streetscapes of the turn of the century. Here is the image of a fully integrated working city which maintains the continuity of the built fabric in the face of complex traffic problems.



[1] Wolf: Eugene Henard and the Beginning of Urbanism in Paris 1900-1914. p. 96.



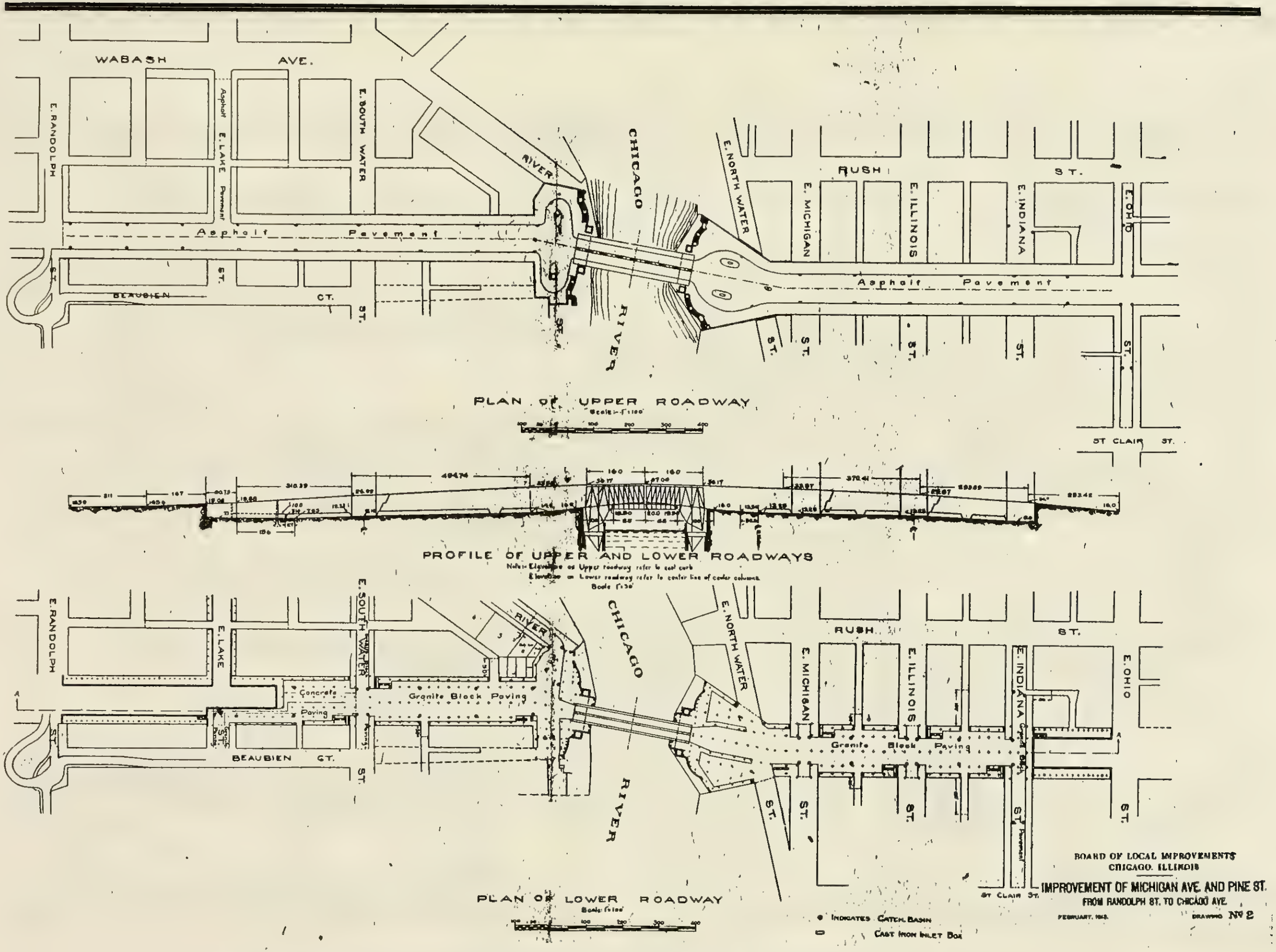


EUGENE HENARD, PARIS OF THE FUTURE, 1900

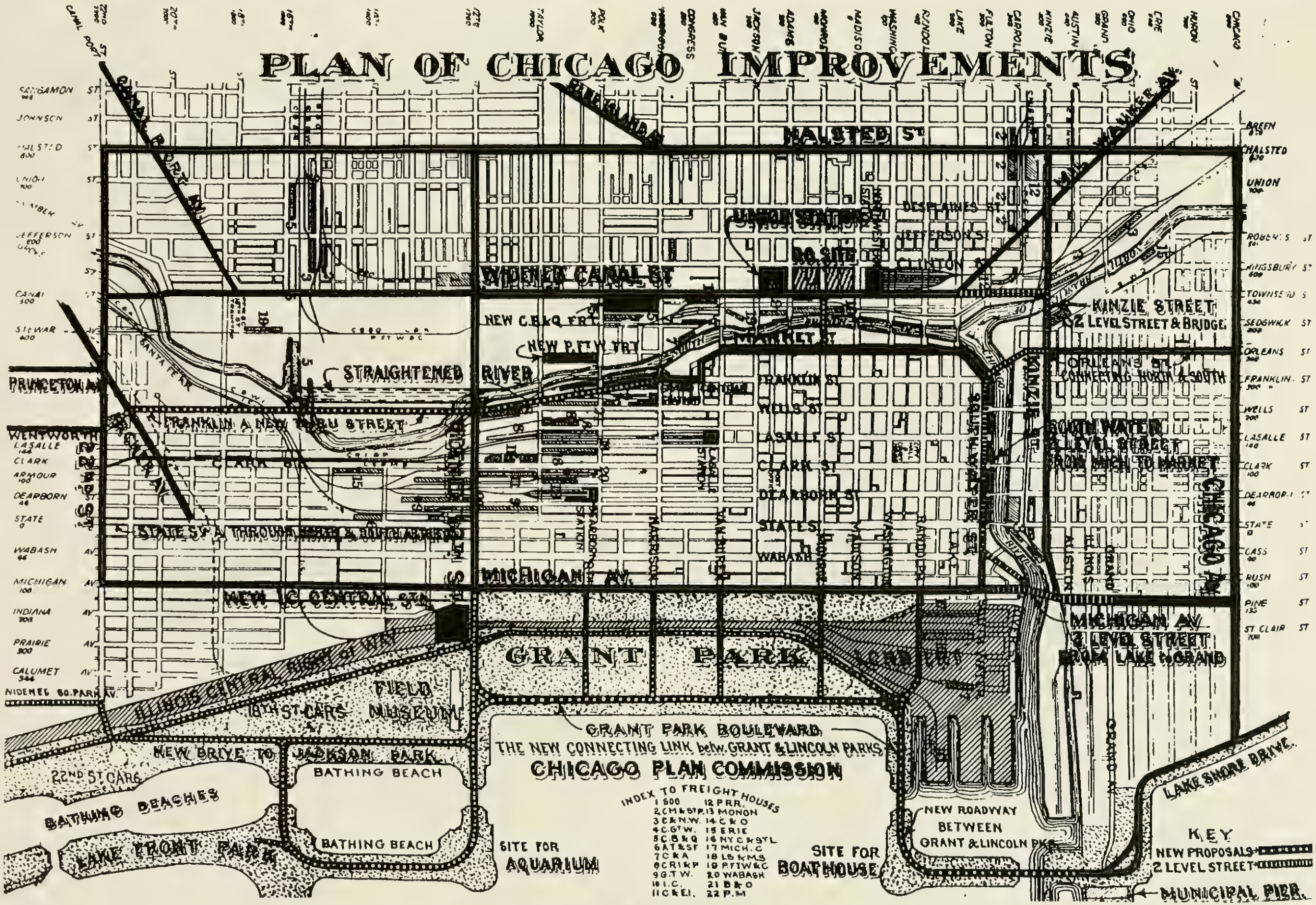
Chicago Plan: 1917 – 1926

One of the most extensive multi-level street systems in North America exists in Chicago, a systems that has been continually expanded since the 1860's. The basis for the system was the decision to elevate the city street level above the tidal flats on which the city was originally located. After establishing what amounted to a new ground plane, an opportunity surfaced for keeping some of the streets and rights of way at the original (lower) level and use them for service. Towards the end of the nineteenth century an extensive network of servicing tunnels (actually covered roadways at the original grade) were built. During the first two decades of the twentieth century, several entire streets were built with an upper (auto and pedestrian) way and a lower (service vehicle) way. Two of the most elaborate of these was Wacker Drive and North Michigan Avenue. These still function in their hierarchical fashion, and the majority of Chicagoans probably do not realize that when they are on Michigan Avenue, they are not technically on grade and that there is a complete street beneath them for trucks and other service vehicles. The key to the success of the system was to make the separation between service and all other kinds of traffic, rather than (as is more common though often less appealing) making the separation between vehicular and pedestrian traffic. In Chicago the perceived street still accommodates all of the variety and inter-mixing of modes endemic to any lively urban environment. But it is the removal of a sizable part of the service traffic from the street that keeps them from becoming overly congested and less desirable for pedestrians.

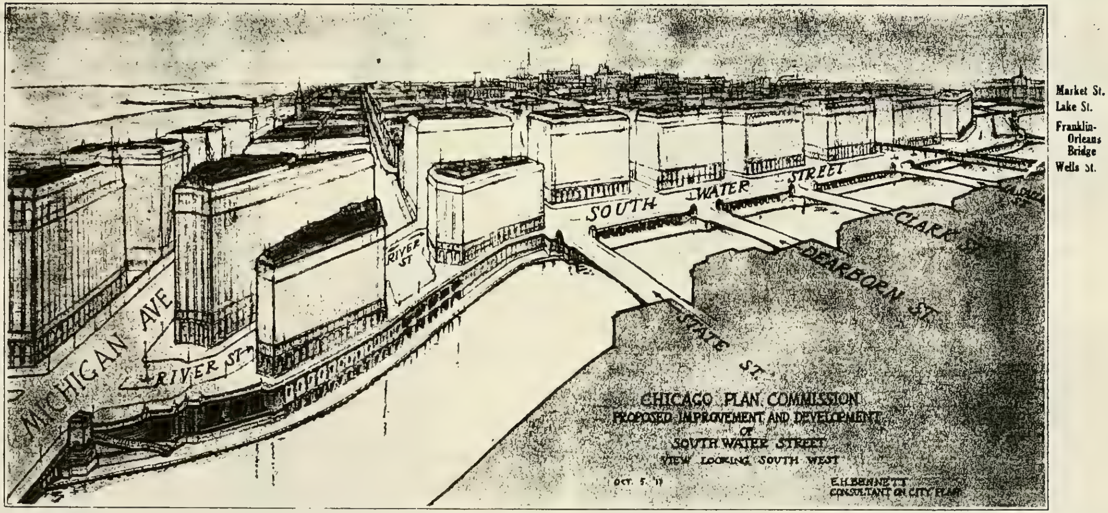
Even today, the system is being extended, most recently throughout the very large redevelopment of the Illinois Central railyards adjacent to the loop. this is an area of Chicago with several parallels to the Fort Point Channel area and is worth studying more clearly during the planning for the Channel area.



MICHIGAN AVE. PROPOSAL: UPPER & LOWER LEVELS

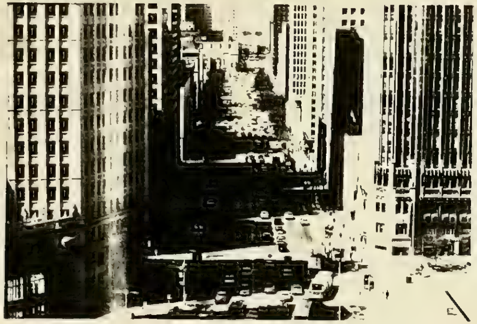


PLAN OF CHICAGO IMPROVEMENTS 1917



SOUTH WATER ST. CONNECTION WITH MICHIGAN AVENUE—a view of the proposed South Water St. improvement looking south and west showing the connection of the upper level with the upper level of the Michigan Avenue improvement. This upper level corresponds to the proposed level of the bridges as approved by the Bridge Department. Masonry construction to correspond to the treatment of the Michigan Avenue Bridge abutments and the abutments of the Franklin-Orleans and Monroe Street Bridges.

WACKER DRIVE IMAGE



UPPER LEVEL MICHIGAN AVE. – LOOKING WEST TOWARDS HUBBARD ST.

LOWER LEVEL HUBBARD ST. – LOOKING EAST TOWARDS MICHIGAN AVE.

LOWER LEVEL MICHIGAN AVE. – LOOKING SOUTH FROM GRAND AVE.

THE IMPLEMENTATION OF THE PLAN: 1924-1926

Saint Louis, Missouri 1928

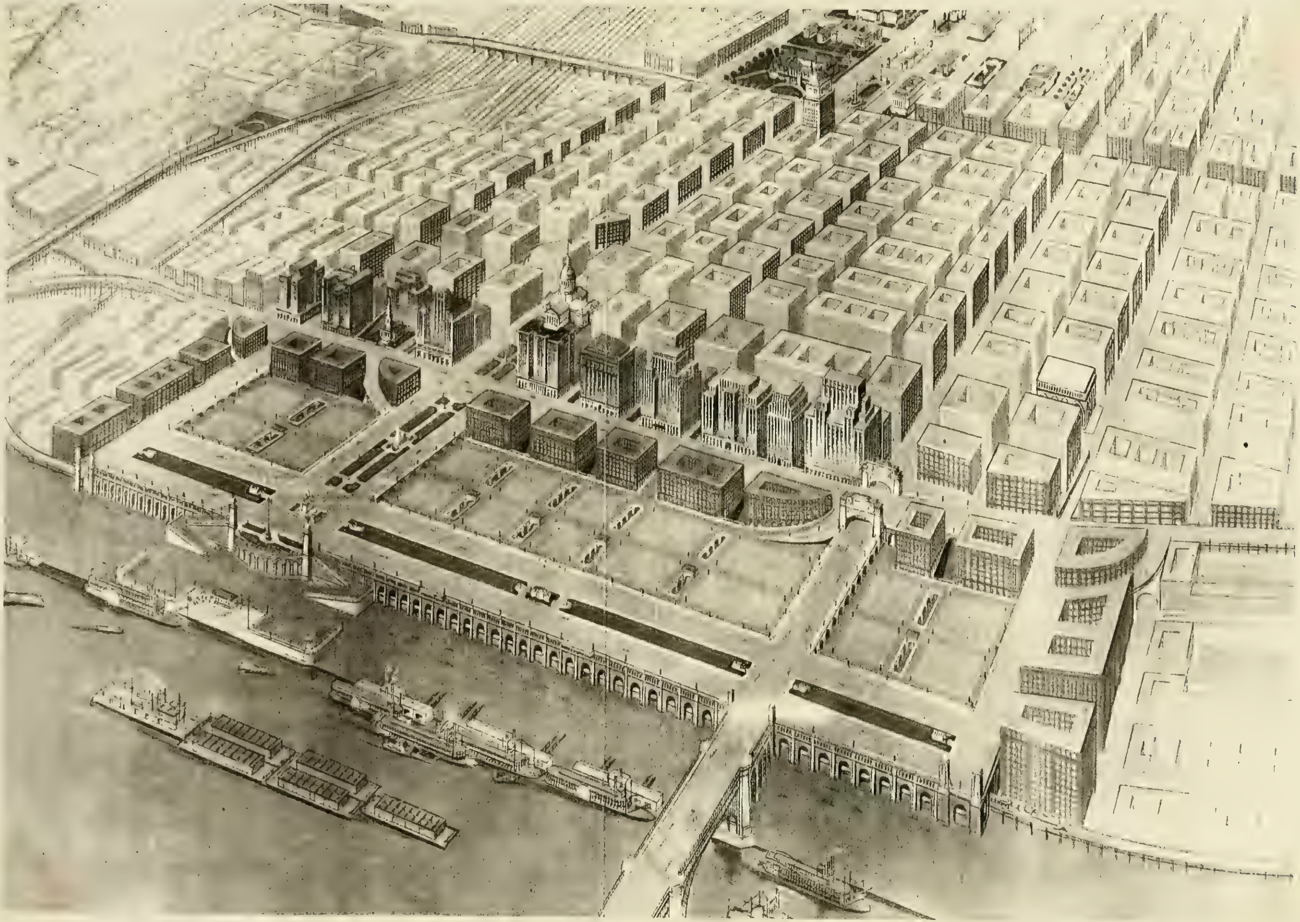
Plan for the Central Riverfront

The Plan Proposal: Several interdependent projects were proposed for revitalizing the Central Riverfront by creating a multi-level experience.

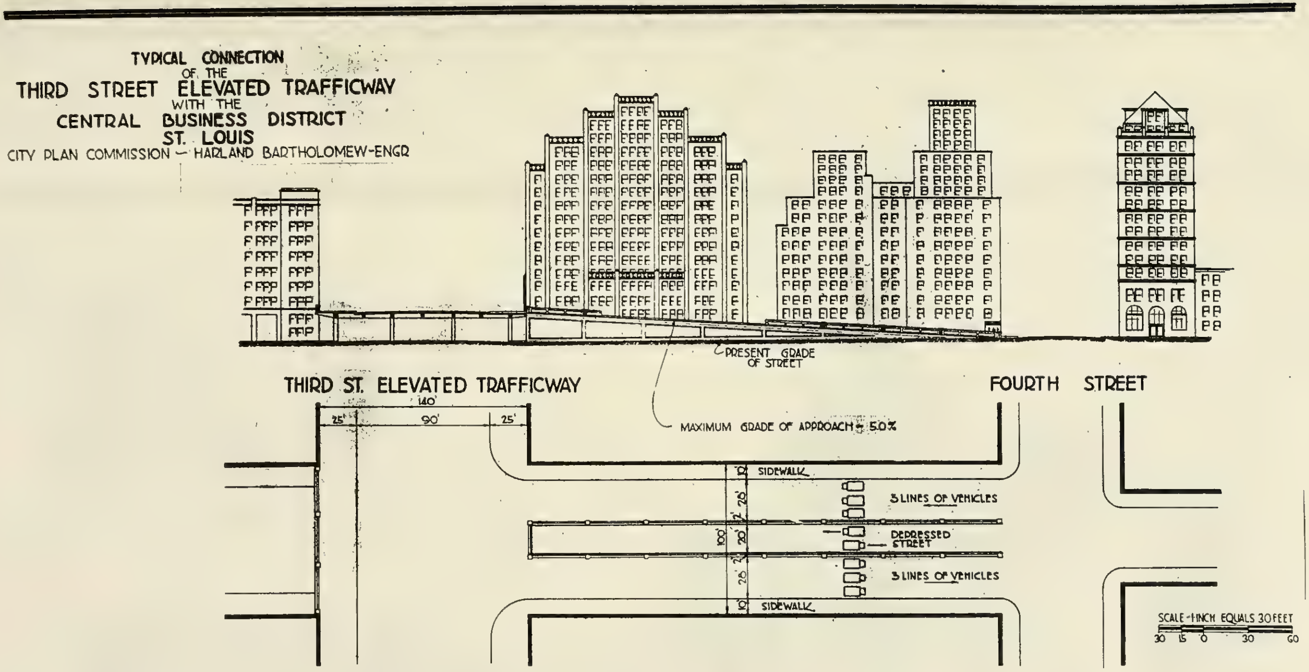
1. A new thoroughfare 100 feet wide from the north and northwestern part of the City to Third Street in the business district.
2. A new thoroughfare 100 feet wide from the south and southwestern part of the City to Third Street in the business district.
3. Construction of elevated roadways in these two thoroughfares, having capacity for six lines of high-speed, non-stop traffic.
4. Widening and double-decking of Third Street (140 feet wide) from Poplar Street to Morgan Street.
5. Acquisitions of all the property between Third Street and the river from Spruce Street to Franklin Avenue for a riverfront plaza.
6. Construction of a high level mall between Market and Chestnut Streets from the Old Court House to the river, with extensions along the river front connecting at the south with Clark Avenue and on the north with the upper deck of Eads Bridge and with Morgan Street.
7. Use of lower levels of riverfront plaza for public parking space and garage, subway terminals and the like.
8. Direct connection between Third Street high level roadway and upper deck on the Municipal Bridge.
9. Widening of Locust, Olive, Pine and Walnut Streets between Third and Fourth Streets to provide direct access between the business district and the upper level of widened Third Street.

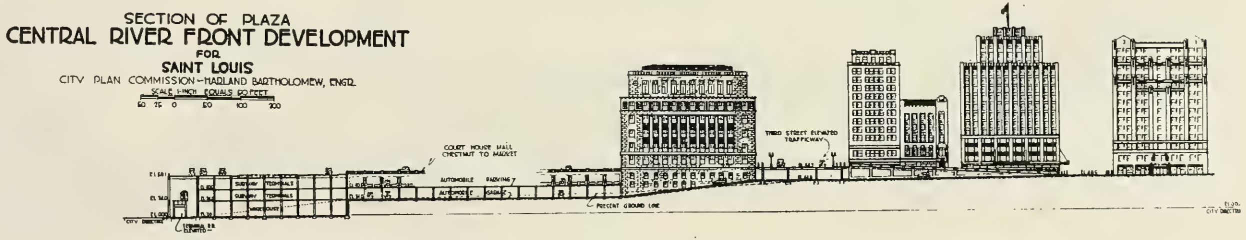
Some of the numerous benefits and advantages to be accomplished by this plan may be briefly summarized as follows:

1. Shifting of the business district will be permanently checked.
2. Property values of the eastern end of the business district will be stabilized and greatly enhanced.
3. The greatly increased street capacity will be a decided advantage to traffic circulation facilities throughout the City, since the plan is completely coordinated with the Major Street Plan.
4. The long sought improvement of the river front will be accomplished in a most monumental manner.
5. Demand for public parking space and garage facilities upon a large scale will be satisfied, since the plan provides an ultimate capacity for the accommodation of more than 8,000 automobiles.
6. Both vehicular and water approach to the City of St. Louis will be highly attractive and inviting.

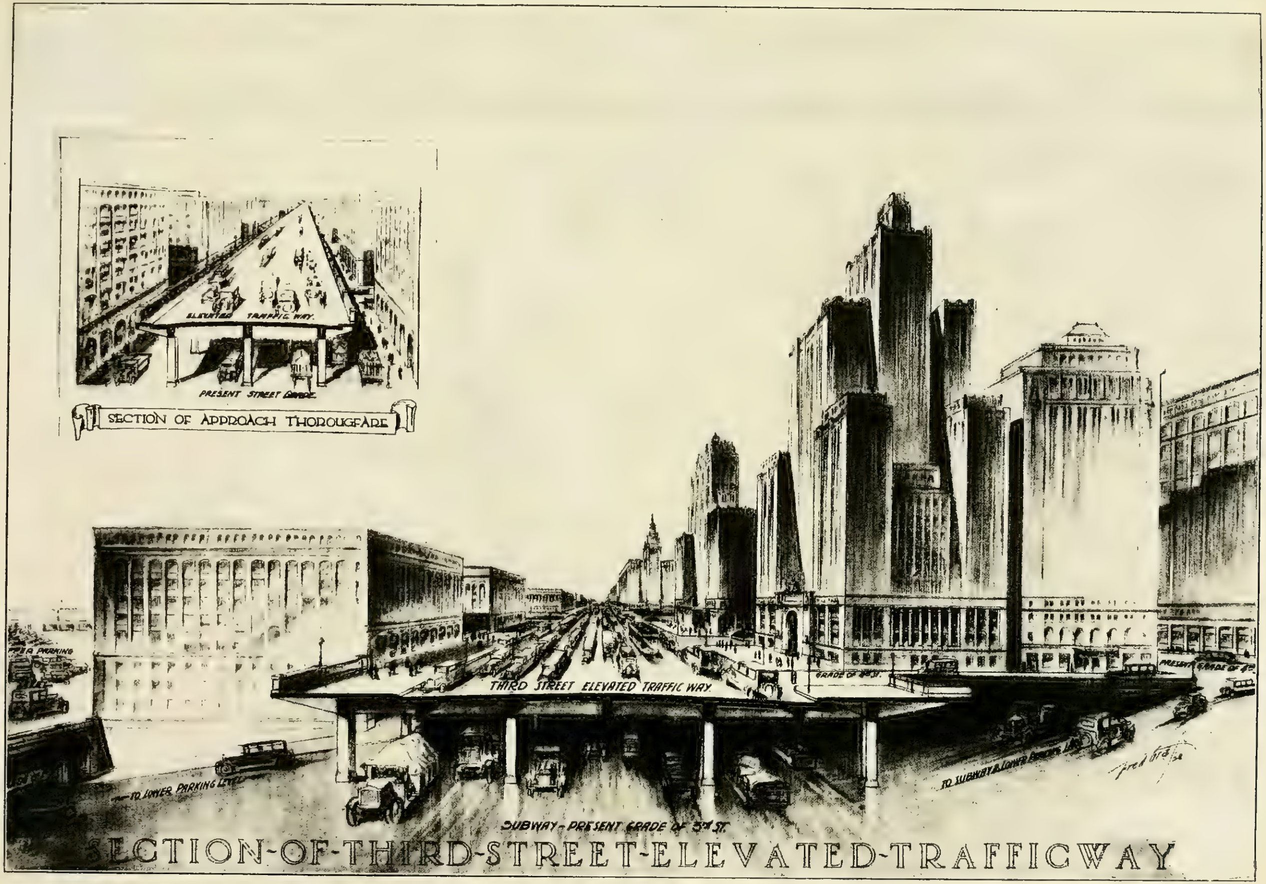


THE NEW FRONT OF THE BUSINESS DISTRICT





DIRECT CONNECTION TO BUSINESS DISTRICT STREETS

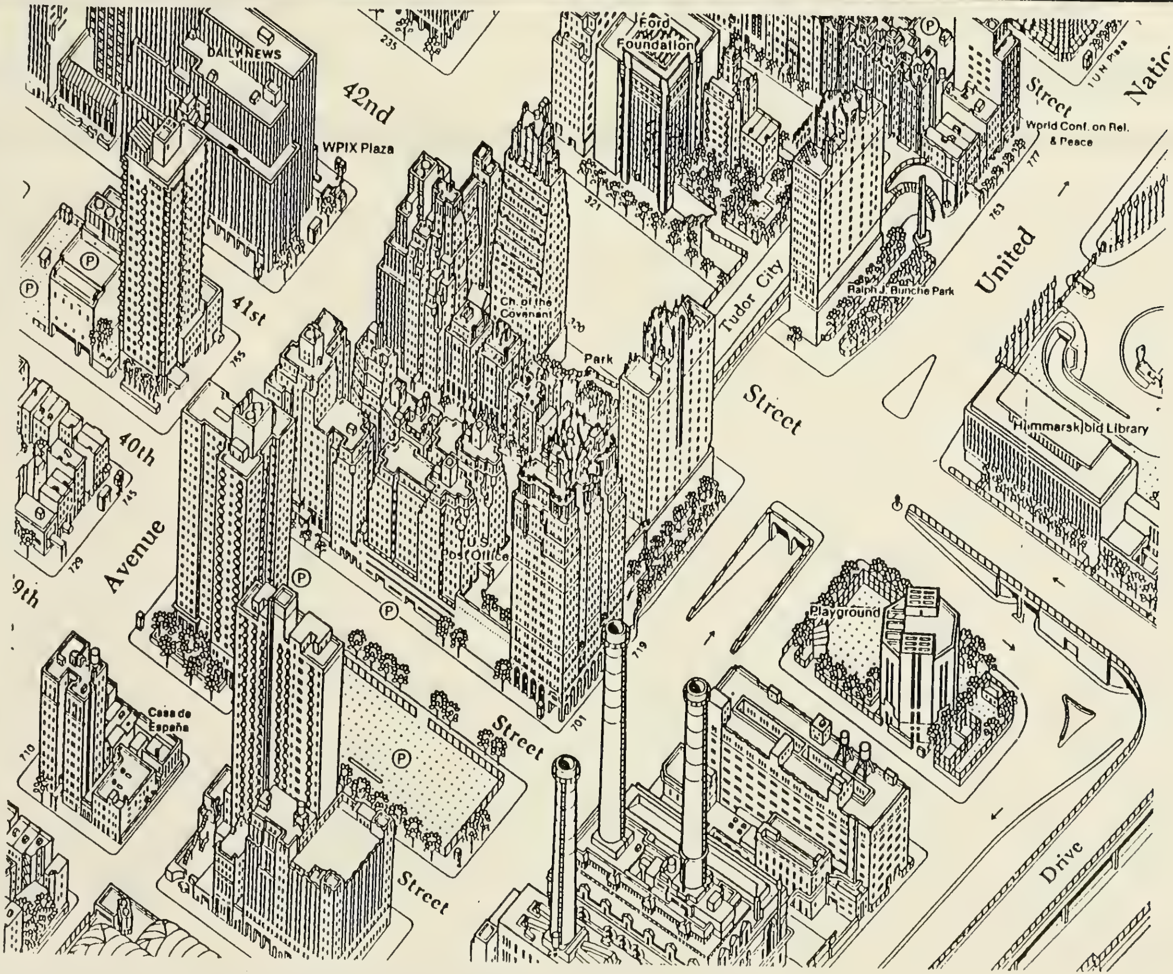


HIGH LEVEL THOROUGHFARE: EASIER TO DESIGN AND LESS NOISE

Tudor City, New York

Tudor City suggests how a carefully integrated system can continue to be adapted over time as development pressures change. Tudor City was built on the east side of Manhattan at about the same time as the Chicago outer drive project when the adjoining future site of the United Nations was a vast abbatoir. As a residential enclave of apartment blocks, it raised itself up from the immediate context, deforming the city grid so that several blocks of quieter residential street could be formed in the heart of the city. By raising 41st and 43rd streets and by taking advantage of the natural topography, it was possible to bridge 42nd Street and join four city blocks into one.

In the 1960s, when the Ford Foundation located its corporate headquarters on the adjacent site, an atrium building was designed, making a semi-public transition from upper to lower streets. Thus, both an interior garden and exterior stairs to parks on terraces above, form a range of public and private accessways between different realms tightly composed within the city. This is a unique example of how public and private networks can be integrated to deal with complex juxtapositions.



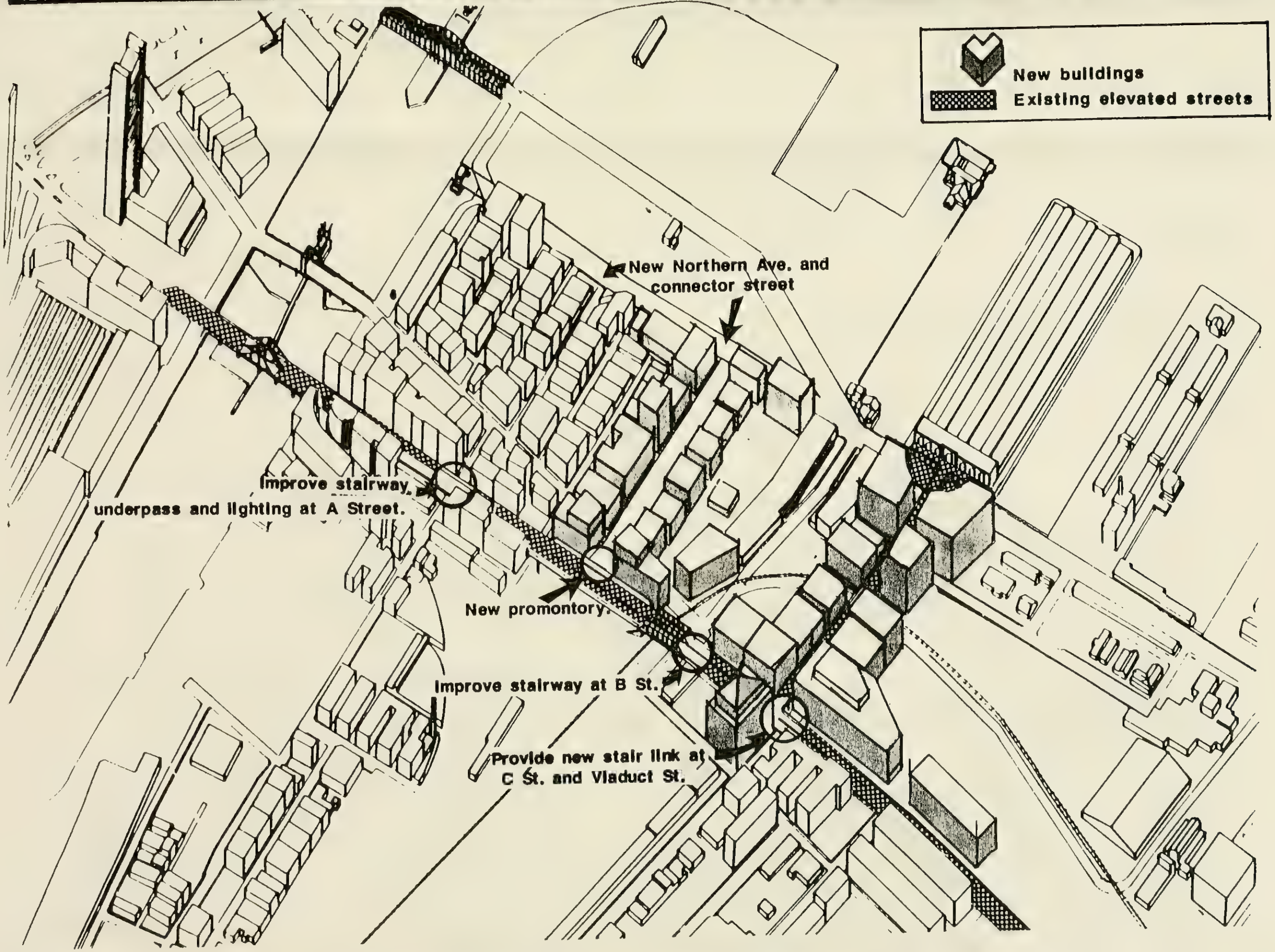
TUDOR CITY AND THE FORD FOUNDATION

Past Proposal for Boston

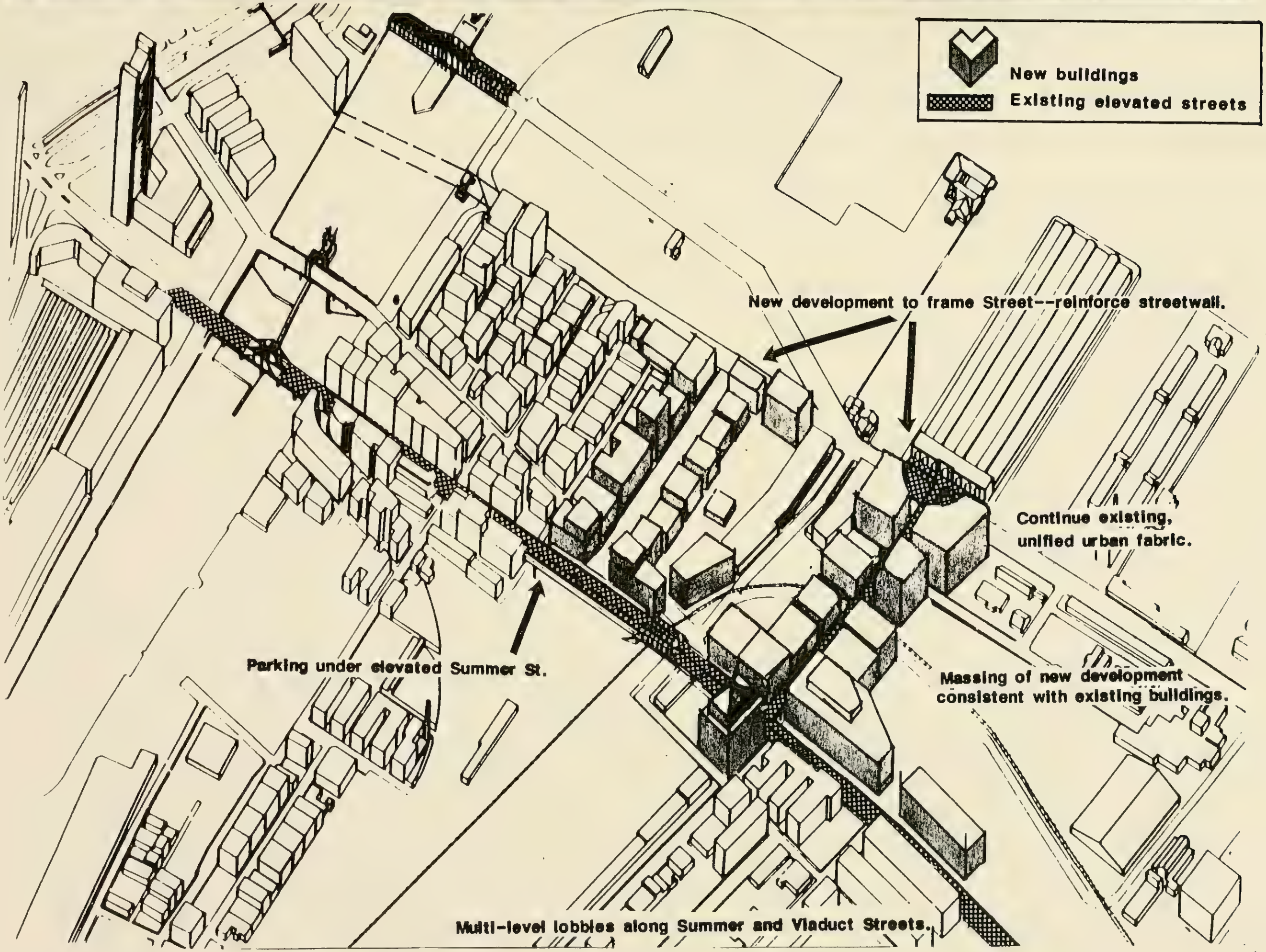
While frequently advocated by planners and transportation engineers, two-level systems are uncommon, largely due to difficulties of implementation. They also occasionally warrant their negative associations, as for example when considering the elevated portions of the Central Artery and its effects on the areas immediately adjacent and below. Other negative connotations relate to attempts to separate pedestrian from vehicular traffic which, at times has led to or diminishment of street life and activity.

Gruen & Gruen CBD plan 1967

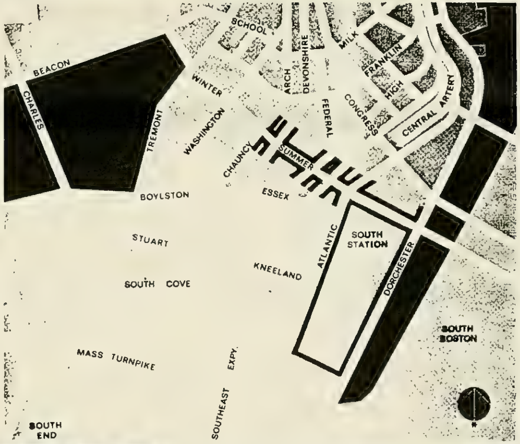
The 1967 CBD plan by Gruen and Gruen, which first outlined a pedestrianized Washington Street, also contained a proposal for converting the portion of Summer Street between South Station and Washington Street into a multi-level street. It is worth comparing this proposal to the experience and possibilities in the Fort Point Channel area. The Gruen proposal advocated a separate and elevated pedestrian level of movement. This has rarely proven successful. Urban streets require and are dependent upon a mixture of private automobile, taxi, bus and pedestrian traffic. It is only when this mixture, to which service traffic must also be added, reaches certain levels of congestion that problems develop. Rather than removing (to another level) pedestrian traffic, the Fort Point Channel system (as it did originally) can facilitate the separation of heavy service and parking related traffic, from the other modes. this seems a much more sensible split, and is the basis for such successful two-level street systems as that in Chicago.

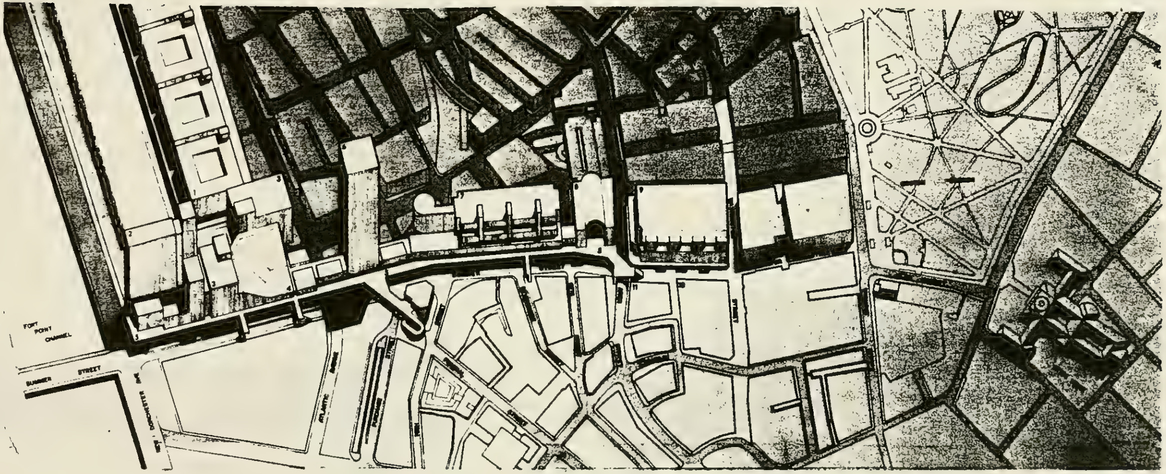


I. Minor Improvements and Modifications: Pedestrian Connections & Rights of Way



II. Minor Improvements and Modifications: Building Typologies & Guidelines





PROPOSED ELEVATED WALKWAY ALONG SUMMER ST.

ALTERNATIVE 1 "MID-BLOCK MALL"

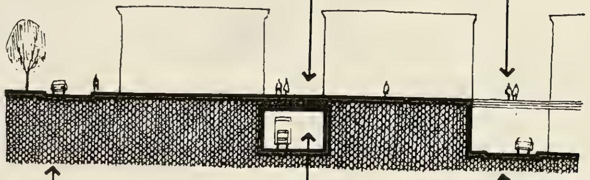
Horizontal separation with pedestrians and vehicles in separated rights-of-way - possible by locating new north-south pedestrian right-of-way and retaining traffic on Washington Street. This plan called the "Mid-Block Mall" concept, is thoroughly studied and detailed with plans, sections, models and cost estimates. Its principal features include:

- A pedestrian mall from Government Center to the Hinge Bloc, midway between Tremont and Washington Streets.

- East-west bridge connections over Washington Street to major buildings and activities, such as Globe properties' site, Raymond's, Jordan's/Filene's, City Mart site.

- Rehabilitation of buildings along mid-block and at cross-overs to accommodate new facilities at raised elevations.

- Potential for climatized shopping environment.



ALTERNATIVE 2 "BLUE NILE"

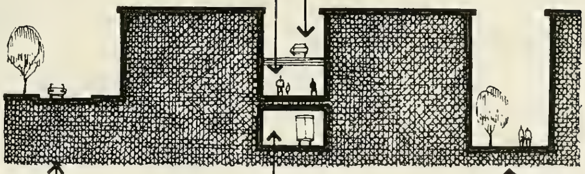
Closed Washington Street to Traffic

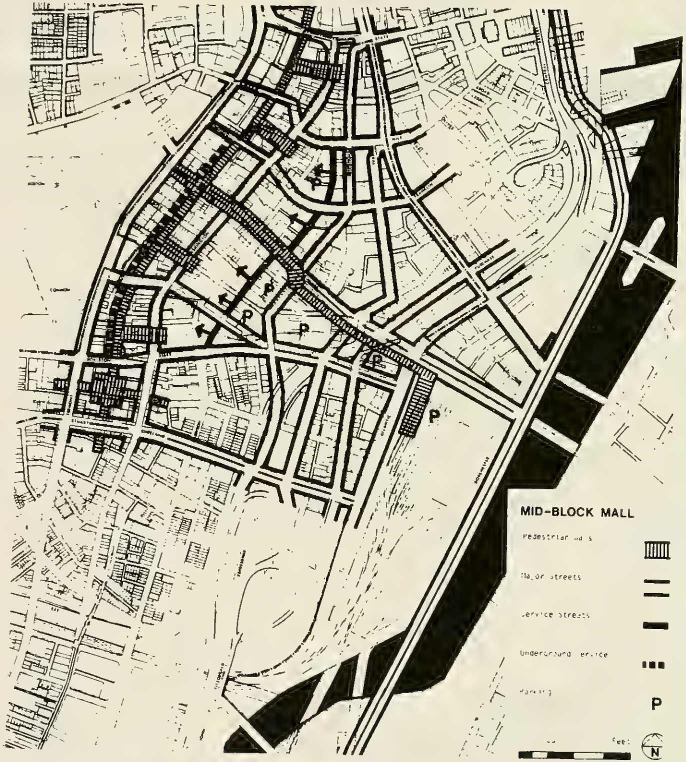
a. Horizontal separation with pedestrians and vehicles in separate right-of-way - possible by locating vehicular route generally along route of previously discussed "Mid-Block Mall", midway between Tremont Street and Washington Street. This plan, called the "Blue Nile", is thoroughly studied with plans and cost estimates. Its principal characteristics include:

- A continuous three-lane traffic route from Court Street to Lower Washington Street, providing necessary bypass requirements to permit Washington Street to be closed to vehicles.

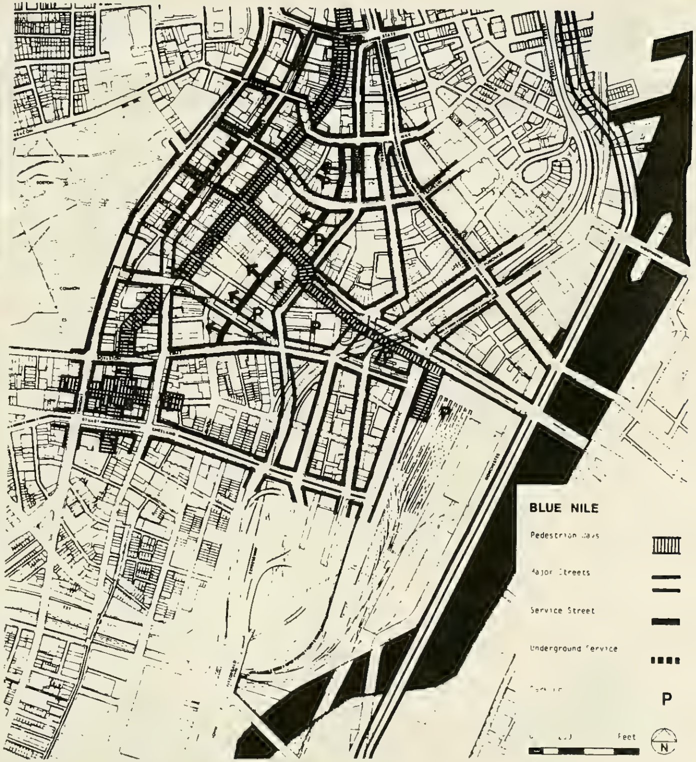
- The roadway would be elevated one level above mid-block grade, permitting pedestrian arcade below.

- Additional parking spaces added to Ladder Blocks' retail district.





ALTERNATIVE 1 "MID-BLOCK MALL"



ALTERNATIVE 2 "BLUE NILE"

CHAUNCY/ARCH
BY-PASS

edestrian Ways

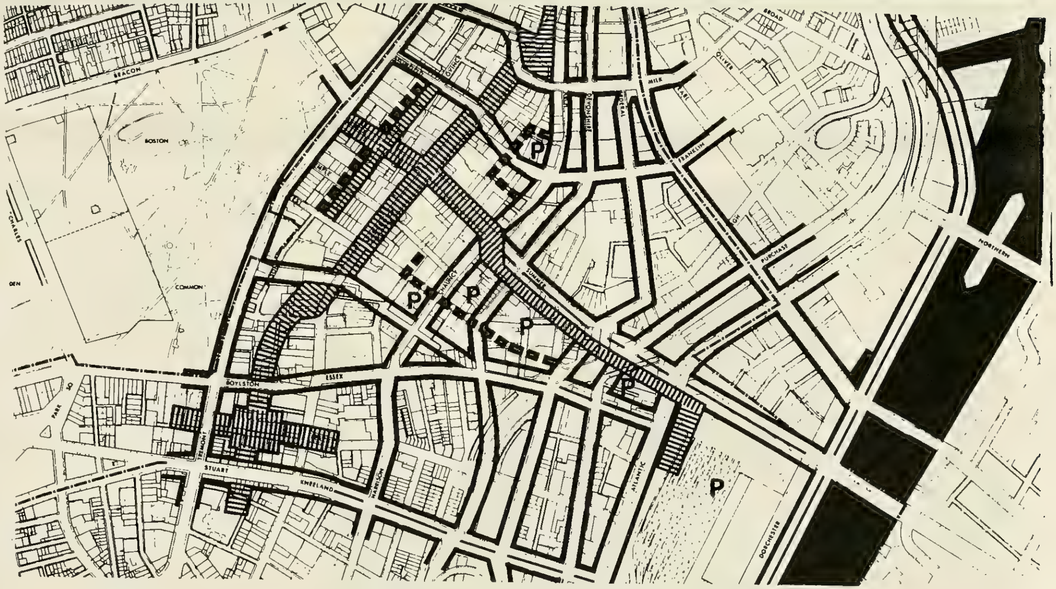
Major Streets

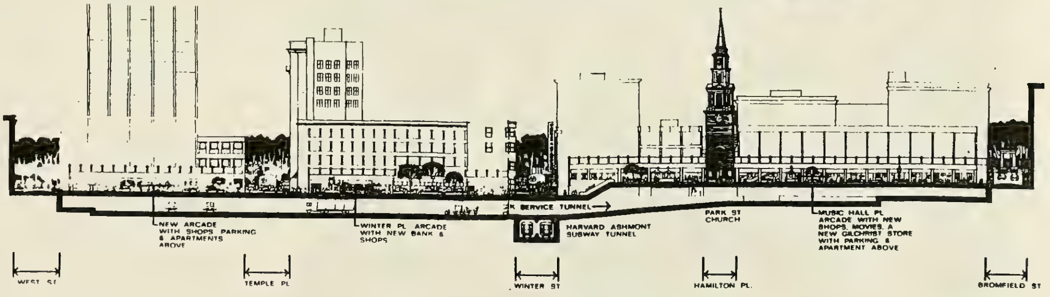
Parking — P

Underground Service

0 200 Feet

N





MID-BLOCK SECTION
BETWEEN WASHINGTON ST. & TREMONT ST. LOOKING WEST TOWARD THE COMMON

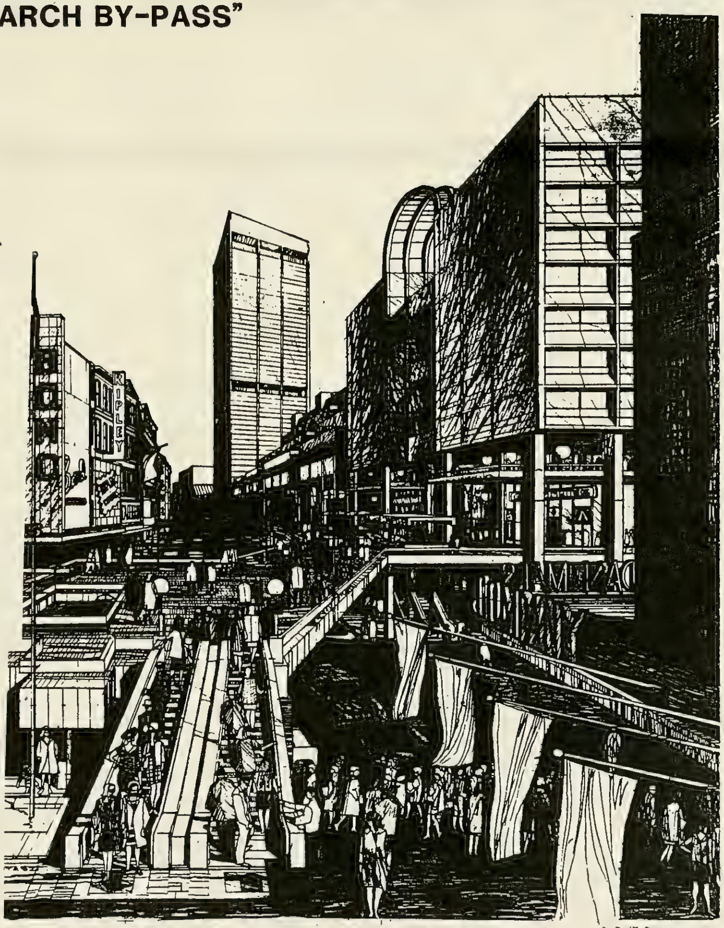
SELECTED ALTERNATIVE "CHAUNCY/ARCH BY-PASS"

SELECTED ALTERNATIVE "CHAUNCY/ARCH BY-PASS"

Horizontal separation with pedestrians and vehicles in separate right-of-way - possible by locating vehicular route east of Washington Street, generally along Harrison/Chauncy/Arch right-of-way with an extension of Arch Street north to the upper end of Washington above Water Street. The advantage of this route over the "Blue Nile" is that while permitting the use of Washington Street for pedestrians, it does not disrupt the ladder Blocks and provides traffic flow and capacity on the east edge of Washington Street center, where it is needed for distribution to parking and service centers.

A prerequisite for operation of this route is the elimination of Jordan Marsh truck service on Chauncy Street.

This scheme is the only practical solution to the problem, and is recommended for inclusion in the Urban Renewal Plan. Detailed analysis and description of Chauncy/Arch by-pass along with total circulation plan follows.



3.5 EXPANSION OF ELEVATED SYSTEM: FORT POINT CHANNEL

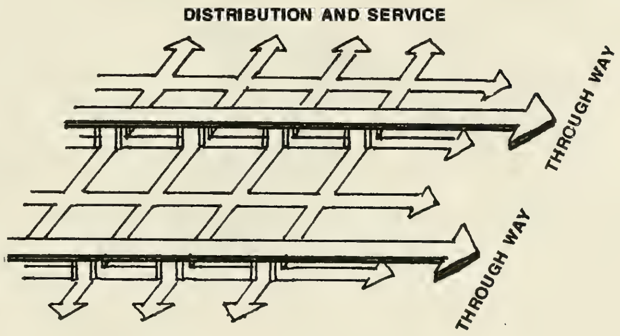
The Chicago experience showed how once a two-level street grid is established, development can occur that is separated vertically while maintaining horizontal continuity allowing foreign and incompatible uses to work together within the central city core. This increases the efficiency of urban land use that would otherwise require incompatible uses to be isolated in different parts of the city and separated by great swaths of no-man's land.

The question this report propounds is what role can this system play in the redevelopment of this part of the city. The previous documentation has examined planned and existing two-level systems, their reasons for implementation and their realized benefits. If considered as a significant component of the traffic system within a comprehensive framework, the Fort Point Channel elevated system can derive many of the same benefits. Because of its significance and the improbability of its elimination this roadway system could control the organization of new blocks and land parcelization for new development.

This is in addition to the opportunities to expand the elevated system into a true, multi-level, traffic and service network. From a practical standpoint alone, this suggests numerous possibilities for increasing the efficiency of the existing street system.

Advantages of Extending the Elevated System

The perceived benefits from continued utilization and extension of the elevated system in the Fort Point Channel area can be categorized into two basic groups: those that deal primarily with the functional aspects of the system and those that deal with its aesthetic and environmental aspects.

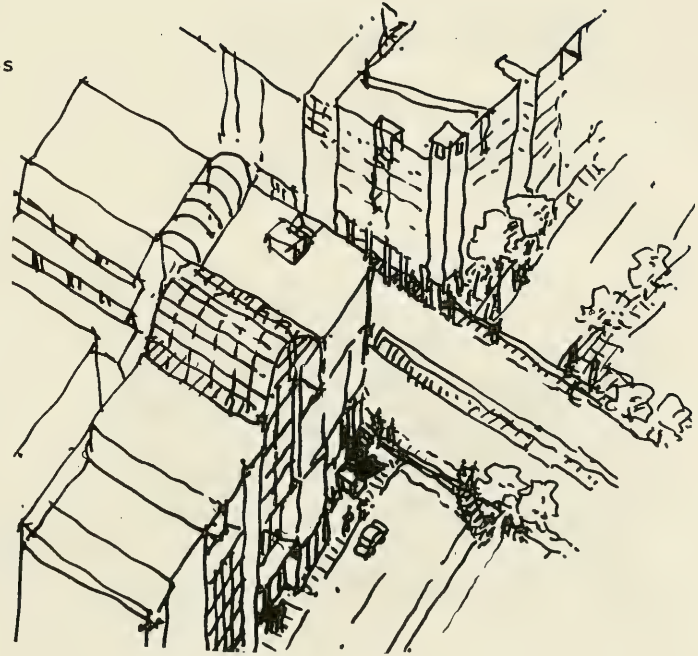


AESTHETIC AND ENVIRONMENTAL BENEFITS

- Building Design Integration: The multi-level traffic system offers the opportunity for future buildings in the area to become an integral part of the traffic system and vice-versa. New structures can be built abutting the elevated roadways with direct access from sidewalks to building lobbies and interior circulation systems for pedestrians at either level. This would offer building users the added option entry convenience regardless of their mode of arrival.

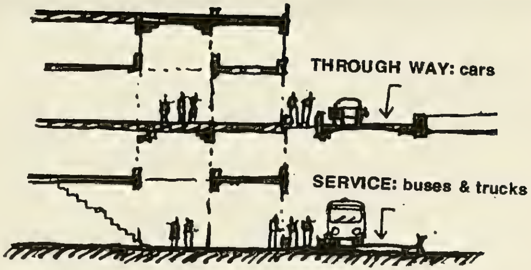
- Views and Vistas: Since the majority of the area is flatlands, the implementation of a multi-level system would enhance the pedestrian experience of views and vistas to the harbor and surrounding areas. The upper level could serve as an "elevated promenade" with wide sidewalks and viewing platforms.

- Pedestrian Access Between Levels: With a multi-level system in place, pedestrian traffic will be generated at both upper and lower levels. Consequently, this situation necessitates provisions for access between the two. This would permit various types of vertical transition (i.e., ramps; stairs; lifts) between levels that would contribute to the pedestrian experience and allow maximum accessibility to adjacent buildings and parking.



FUNCTIONAL BENEFITS

- Traffic Separation: By providing a vertical separation of roadways, local traffic could be accommodated at one level while regional traffic could be accommodated in the other. This separation of traffic types would allow for the increased, overall operational efficiency of all roadways. Local traffic which requires more frequent stops at intersections with cross streets, would be isolated on another level thus permitting the uninhibited movement of regional traffic.



- Restriction on Service Traffic: Vertical separation of roadways could also accommodate servicing and parking for adjacent buildings on the lower level. This would allow for traffic operations and pedestrian movements to exist at the upper level, uninhibited by servicing and parking entrances which is usually the main cause of congestion on area streets.

- Pedestrian vs. Vehicular Movement: Similar problems exist with pedestrians as with vehicles when they both must cross at an intersection, but usually it is the pedestrian who is at the greater disadvantage. By separating pedestrian movement from certain types of vehicular traffic the potential conflicts between the two at intersections can be minimized

DESIGN ALTERNATIVES

This section will concentrate on the potential alterations and expansions that could be developed. These will be organized into two categories of improvements. The minor improvements/modifications will be targeted at maintaining the existing system, improving its usefulness and indicating the opportunities the system creates. The major improvements will focus on the grand scale vision; where the existing street network can be expanded, what other networks can be created, and what the advantages of an expanded system would be.

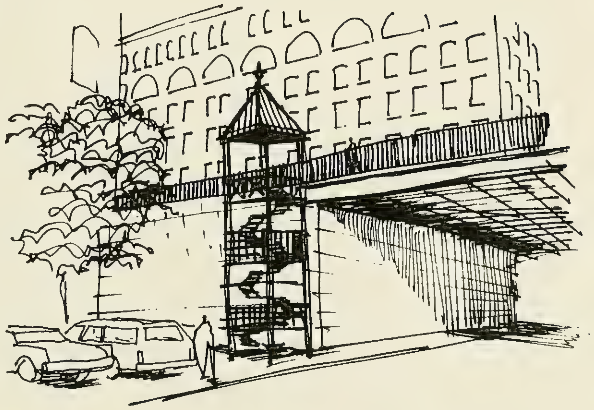
A. Minor Improvements

- Structural Repairs to the Existing Bridges and Viaducts - the existing condition of the roadway structures in the Fort Point Channel District particularly the Summer Street viaduct are such that they can no longer accommodate even normal daily traffic. Buses are diverted around the Summer Street viaduct for this reason. The Northern Avenue bridge is frequently inoperable and the remaining bridges have been fixed in place for safety reasons. Before a new system can be created, the existing must be repaired.

  - Repair Summer Street viaduct
  - Repair Northern Avenue bridge

- Improvements to Pedestrian Connections and Rights of Way - the foundation for developing a unique pedestrian environment exist in the stairways and bridges of the district. However, these stairways are in disrepair and the underpasses are poorly lit and filthy. A plan for the lighting, signage and maintenance of pedestrian spaces in this district would improve the public realm.

  - Improve stairways at A and B Streets
  - Add stairways at Summer Street viaduct
  - Improve underpass (and lighting) at A Street
  - Add stairway at Viaduct Street and Summer Street



South Boston Application

A question that has gone unanswered to this point relates to the appropriateness of extending a two level street system in the South Boston/ Fort Point Channel district. As has been previously noted, the existing system of grade separated streets was created to ease surface vehicular and railway conflicts. The removal of the railway network left vast areas of land with no access system. The Fort Point Channel District's existing building and street infrastructure suggest this area is a logical location to create a true network of grade separated streets. The following factors express why some change must be made:

1) This district of Boston is prime to absorb the impending growth of the city. Over 13.5 million square feet of development is anticipated in the next 10 years which will increase the traffic burdens to the point where an expanded circulation system must also be developed.

2) As was previously stated, the district does not have an extended network of streets. The need to establish a street/block pattern has now presented itself and the opportunity to develop a two level system can be the focus of the improvements.

3) The opportunities for implementing transportation improvements are amplified due to current planning efforts. Traffic and mass transit proposals are being developed including the Third Harbor Tunnel and extension to the Southeast expressway. These improvements in addition to the New Northern Avenue bridge provide the foundation or framework for a comprehensive circulation system.

Develop Building Typology and Guidelines. The existing buildings of the Fort Point Channel district create a unified fabric that is worth continuing. The scale and detailing of the buildings create distinct street experiences, from the broad majesty of the Summer Street buildings to the tight, intimate feel of the cross streets like A or Farnsworth Streets, or the sweeping curve of Meltcher Street. By using this existing street and building pattern to set the height and massing and adding internal organizational features such as multi-level lobbies, new buildings can be developed along Summer and Viaduct Streets that follow the existing urban pattern while utilizing space under the elevated street rights of way for parking. This will eliminate the need to locate the parking completely underground providing direct vehicular access from the lower streets, i.e., Congress.

1) Parking under Summer Street
2) Multi-level lobbies in at least one building/block along Summer Street

Extension of the Fort Point Channel Street Grid. As additional development marches down Summer Street, a system of cross streets can be created that follow the A Street example, i.e., being grade separated from Summer Street. This would allow traffic accessing downtown via Summer to be uninterrupted by local district traffic.

New streets can be provided at B, C, Viaduct Street/D Street and additional streets through Commonwealth Flats.

Preservation of View Corridors from Elevated Summer Street. With Summer Street being elevated, opportunities are created to actually see Boston Harbor (the water), views not possible from the Congress Street elevation. New development should be oriented to preserve these views organizing them with the cross streets and pedestrian stairways.

- Views from new cross streets
- Views from Viaduct Street

Creation of elevated promontories. The grade changes create a unique feature on the flat landscape of Fort Point Channel district and as such provide the opportunity to develop special places. The strategic location of architectural features, open spaces and pedestrian links can create these places in the image of the Spanish Steps of Rome. Buildings can also to used to frame vistas particularly along Viaduct Street framing the Beaux Arts facade of Commonwealth Pier.

1) Mid block promontory in between Third Harbor Tunnel ramps and access roads
2) Promontory established along "B" Street
3) Strengthen vista along Viaduct Street

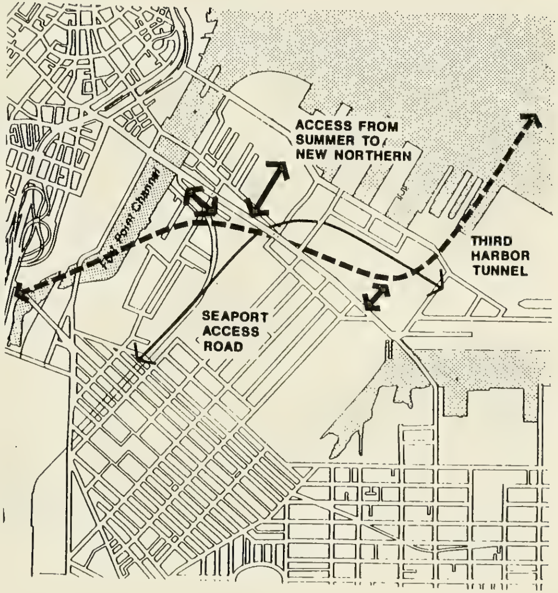
B. Major Improvements

The classifying of two elevated streets as a two level system is a misnomer. Future development of a network of streets and buildings that take advantage of the existing elevated streets could lead to the formation of such a system, especially if the scenarios laid out under minor improvements come about. The minor improvements could be coordinated with longer range goals to allow the fragmented components of the existing system to guide the planning and development of the entire district. These goals focus on the movement of traffic through the district to downtown and the regional highway network. This must be accomplished while maintaining access to the South Boston residential community and not encouraging the regional traffic to move through it. The plan developed for the district proposes the development of a circulation system; the major improvements will target how these can be accomplished.

Accessing Existing Elevated Streets - Summer and Viaduct Streets allow limited access to the adjacent streets and buildings of the Fort Point Channel district, and to the planned connections to the Third Harbor Tunnel. Additional connections may be advisable to ease some of the traffic shortcutting through South Boston. New streets at the raised elevation might also serve to expand the two level system with the elevated level serving the general access needs and the lower level providing service/parking access.

1) Provide direct access ramps to Summer Street from Third Harbor Tunnel/New Northern Avenue (ramp over Congress Street) meet New Northern Avenue at grade.

2) Provide access from Seaport Access Road.



Additional Elevated Streets - Some of the vehicular conflicts created in urban areas are a result of the sequence of street intersections being too close to allow any smooth movement. The discontinuous nature of Boston's streets compounds the problem. By elevating the streets (separating intersections) some of these conflicts can be eliminated.

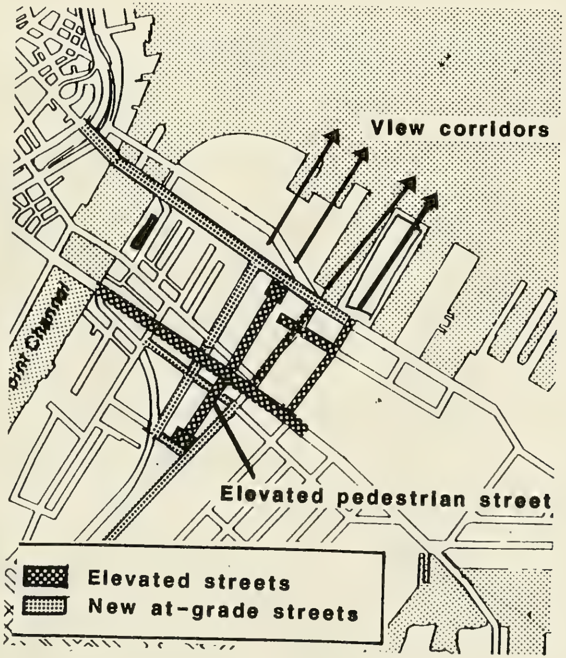
1) Elevate New Northern Avenue to provide direct access over Atlantic Avenue and the Central Artery to Purchase Street, Oliver Street and Downtown Financial District.

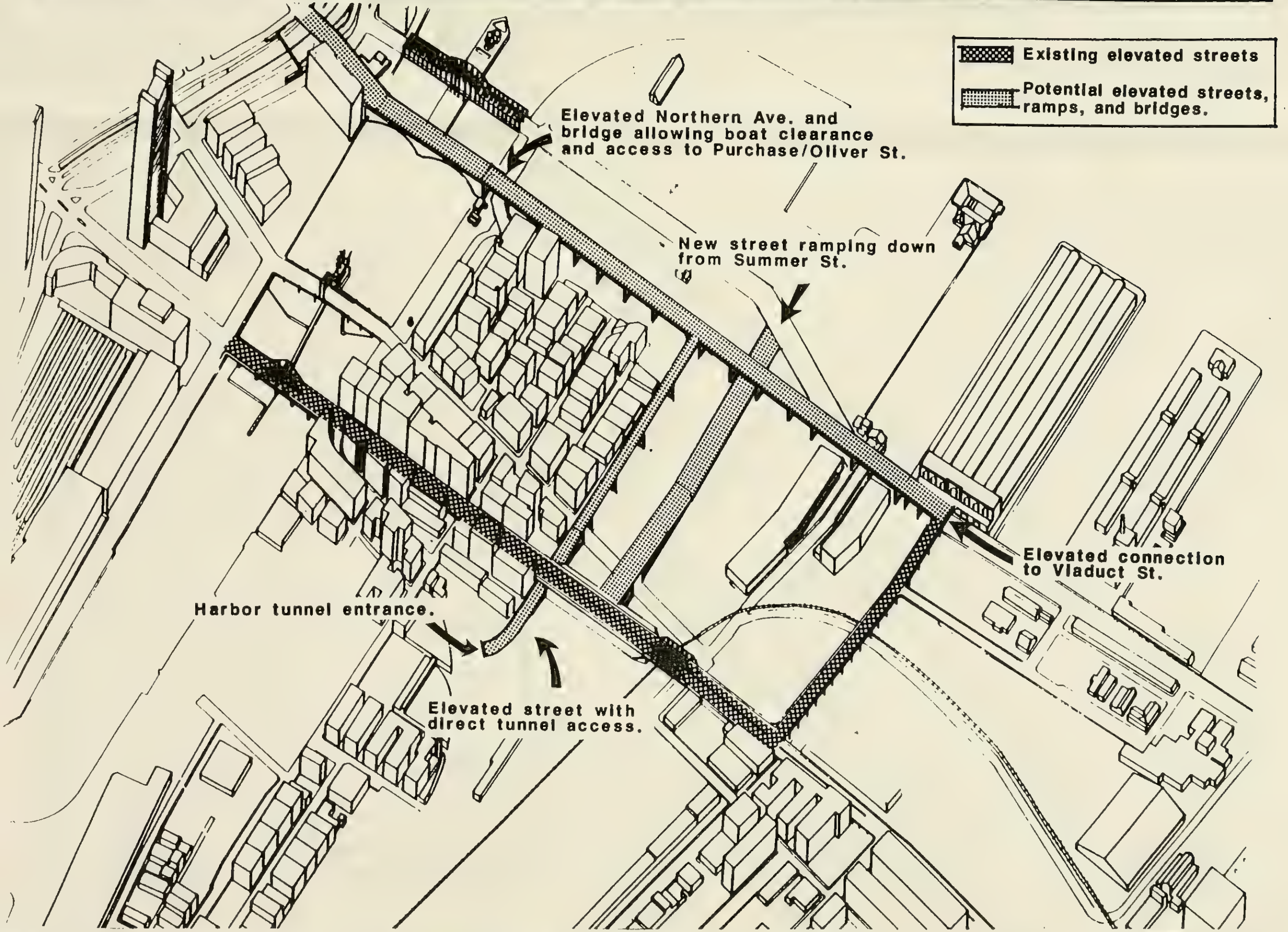
2) New Northern Avenue could also connect to Viaduct Street at Commonwealth Pier creating more opportunities for the World Trade Center development.

3) Develop system of elevated "finger" streets similar to Viaduct Street. Opportunities created by this option include connecting to a proposed monorail system over Northern Avenue, creating an elevated pedestrian street above a vehicular parking/service street below, or provide intermediate links to elevated streets running parallel to Summer Street.

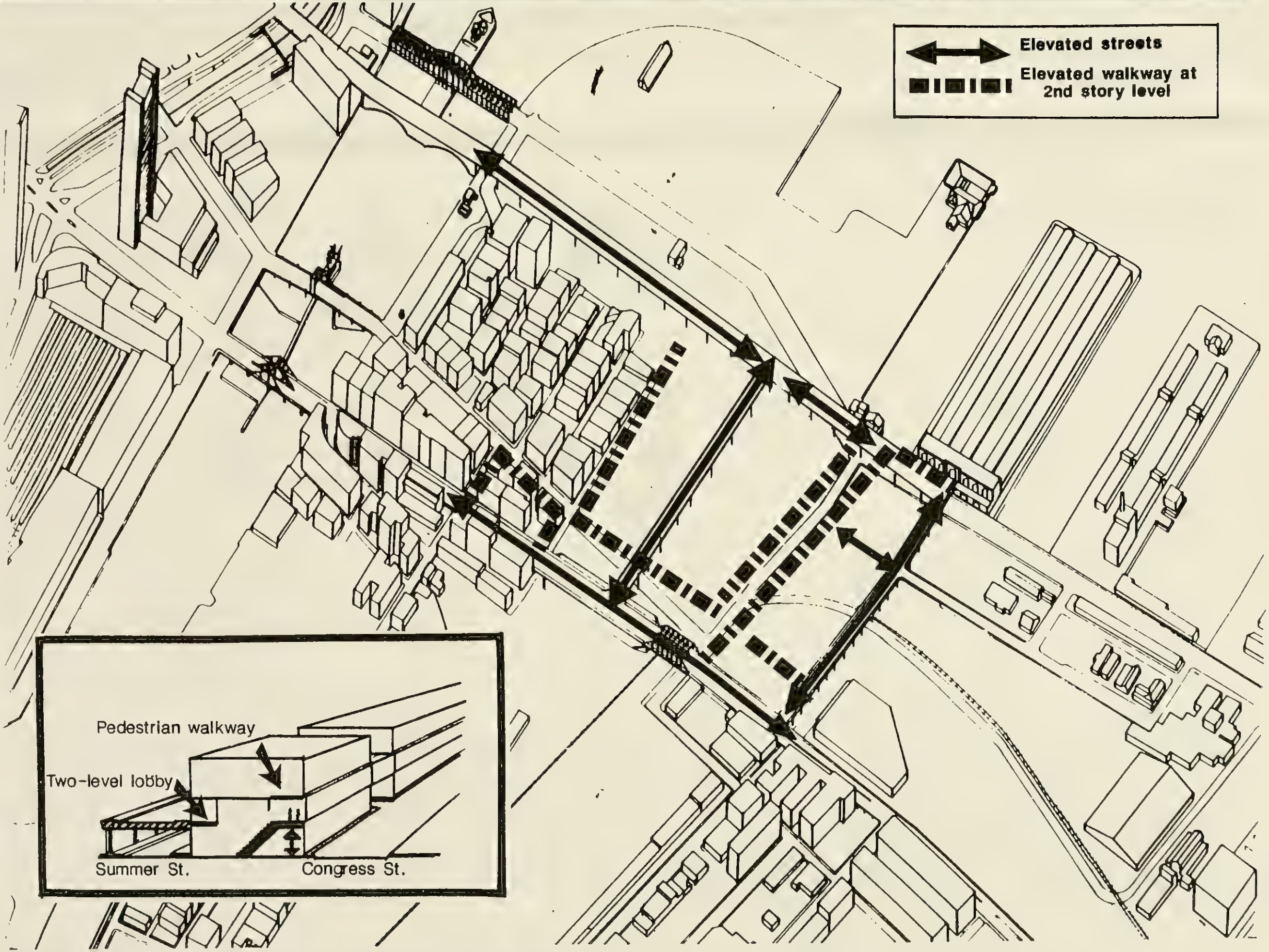
Elevated pedestrian walkway network - With Summer and Viaduct Streets remaining elevated, new construction extending the urban fabric along these corridors and elevated streets being linked through two level lobbies to grade, the opportunity also exists to create a separate pedestrian network along the idea of Minneapolis' skywalk.

1) Create parallel walkway along Summer and Viaduct
2) Create parallel walkway to Northern adjacent to monorail

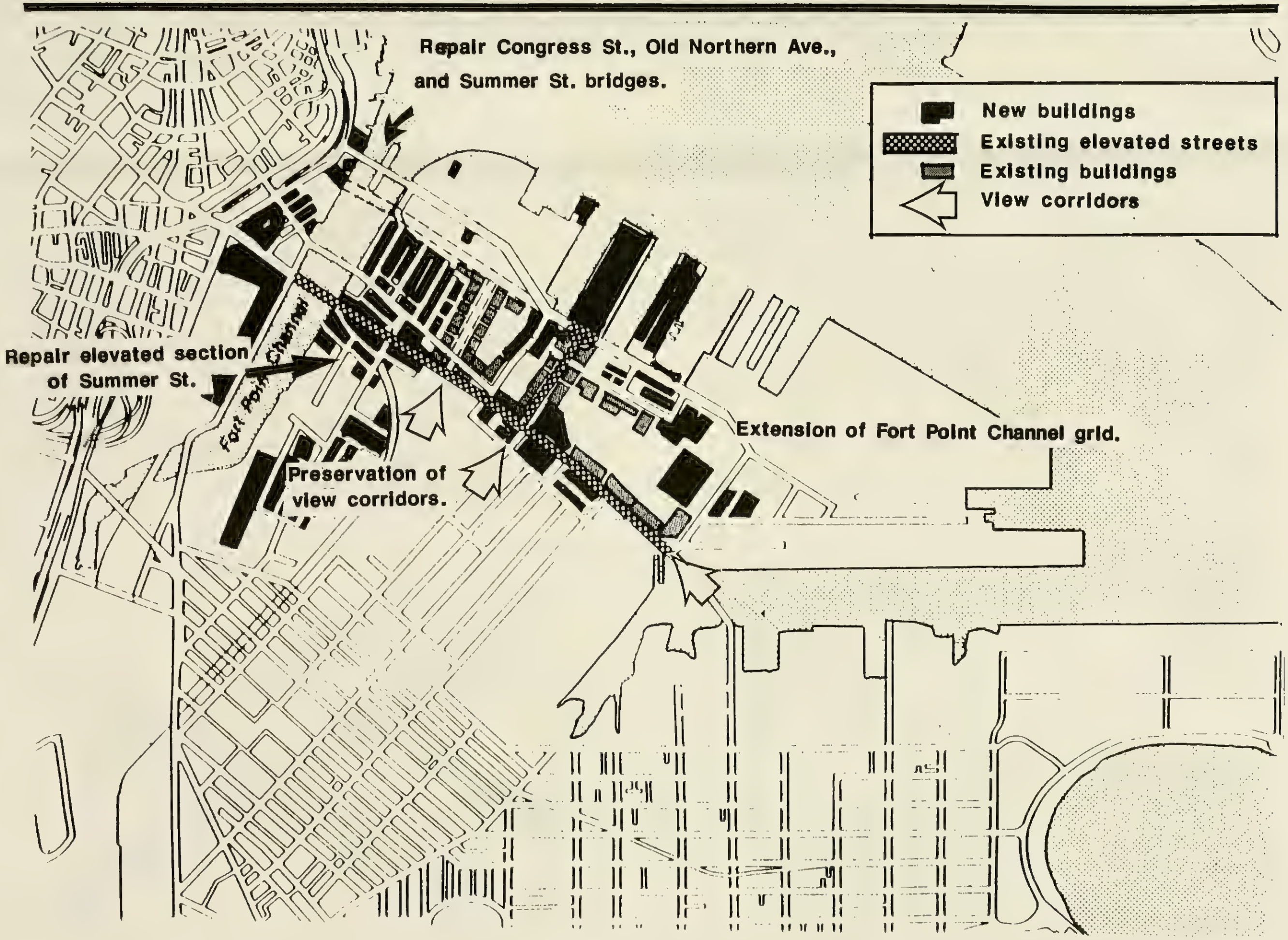




I. Major Improvements and Modifications: Elevated Major Expansion Opportunities



II. Major Improvements and Modifications: Elevated Pedestrian Network

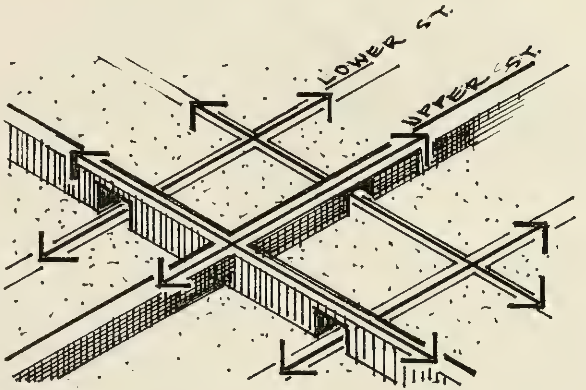


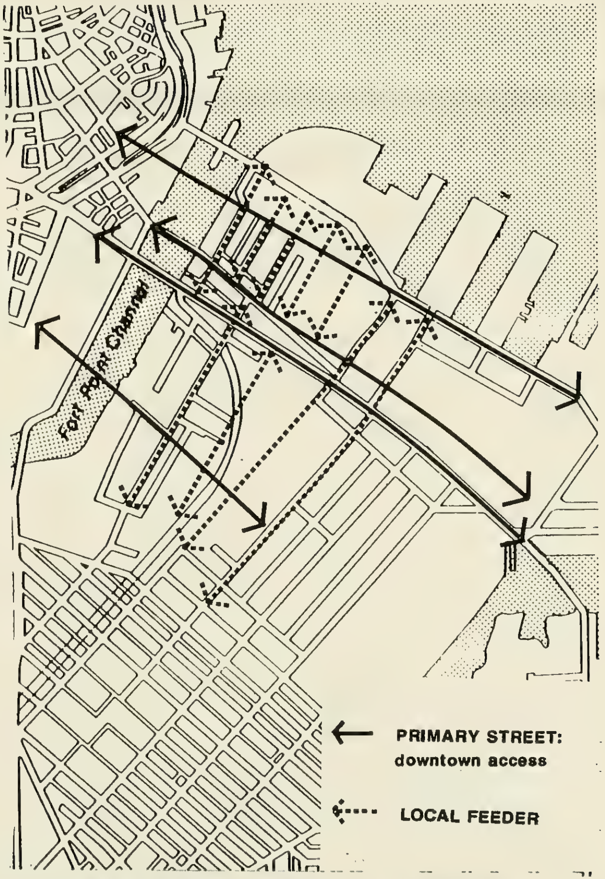
III. Minor Improvements and Modifications: Roads, Bridges, & View Corridors

DESIGN GUIDELINES

New Streets

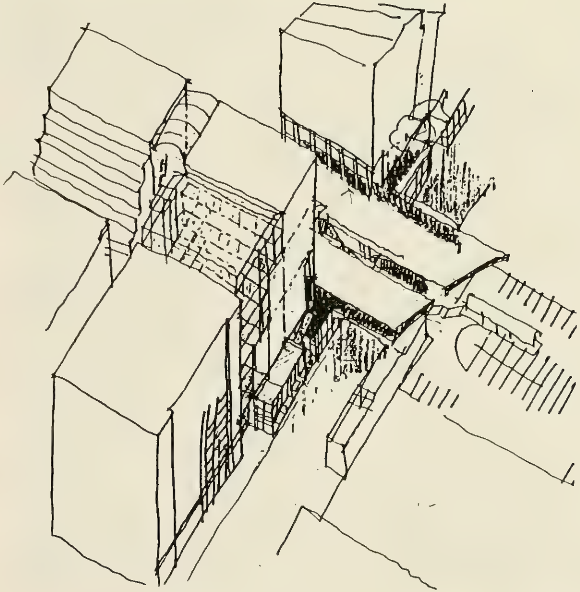
Pattern - The development of additional public streets must respond to the existing pattern of streets in the historic Fort Point Channel warehouse district. Primary access to this district must be from the existing streets that have direct access to Downtown Boston (Summer Street, Congress Street and Northern Avenue). Because these streets are grade separated, a staggering of the intersections up and down will create fewer points of vehicular conflict. (See Figure 4.5.5.1.) Public easements including air-rights must be maintained at both levels for all new streets, especially at the intersections.





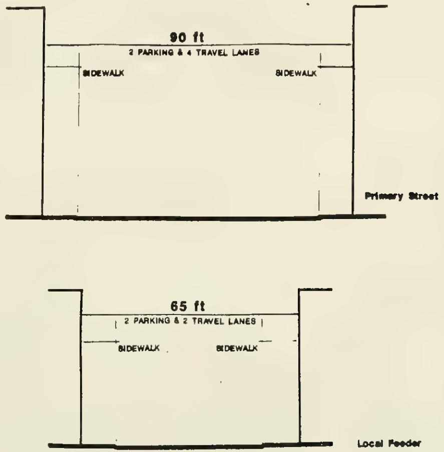
Existing and expanded network

Vehicular Access - The organization of new streets should be oriented to provide access to parking and service areas from the lower street level and access to mass transit and the general public (pedestrian) on upper streets. Uncovered lower streets should also provide public pedestrian access from the street to upper streets where possible.



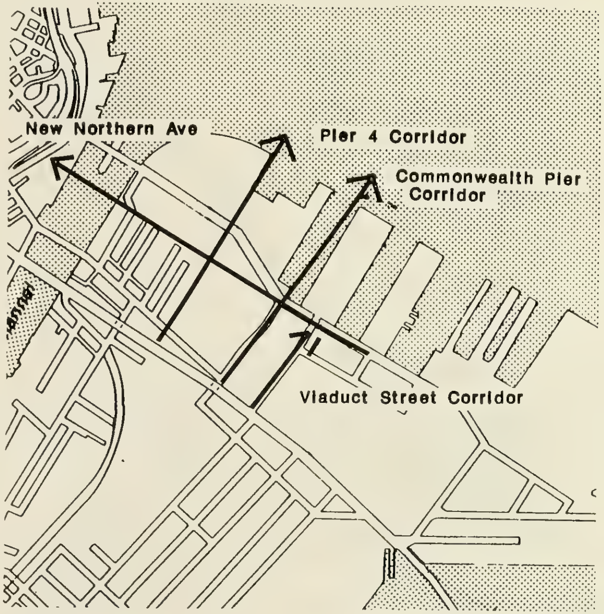
Street Dimensions - The existing E-W streets (Summer Street, Congress Street and Northern Avenue) are the major arterials to Downtown. Additional streets parallel to these providing access via bridges from Downtown should maintain this major arterial pattern and have a minimum R.O.W. of ninety (90) feet.

The existing N-S streets provided local access to warehouses. New streets feeding the arterials should maintain this more intimate pattern and a minimum R.O.W. of sixty-five (65) feet.



Fort Point Channel Guidelines : Street Dimensions

View Corridors - The new streets should be aligned to take advantage of existing view corridors to the Harbor and Downtown and to create new views. New development should be sited to preserve the designated views. Ramping or sloped streets that provide a gradual connection between levels should also be aligned to focus on the important views.

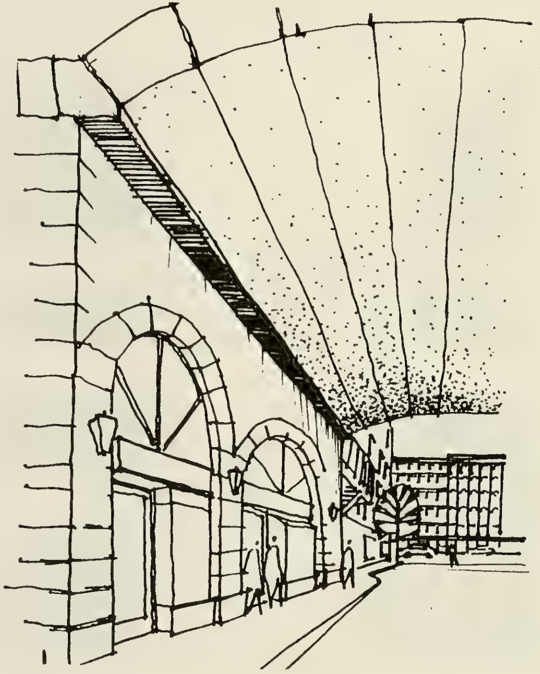


Intersections - The unique aspect of the grade separated (two level) street network is the opportunity to connect these streets at their intersections both physically and visually.

Pedestrian stairways - The crossing of streets at Summer Street and A Street and Summer Street and B Street feature public stairways that provide direct pedestrian connections between the two levels. This pattern should be expanded to include other connections along Summer and Viaduct Streets as well as any new streets added to the district.

Promontories - To be above the crowd and look out over the landscape is an exhilarating experience. Opportunities exist to create these spaces in conjunction with the intersections and should be integrated with the stairways and bridges.

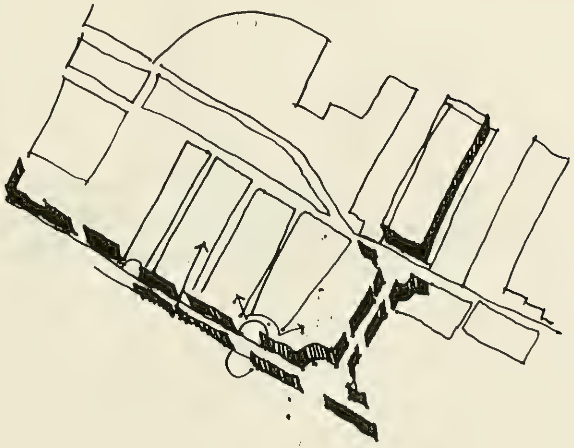
Bridges - The underpasses create protected spaces generally underutilized because of the street noises from above and problems attributed to cleanliness. There are opportunities however to develop these spaces for parking or accessways to parking. These underpasses should be activity utilized for parking, retailing or even protected pedestrian walkways like an enclosed mall.



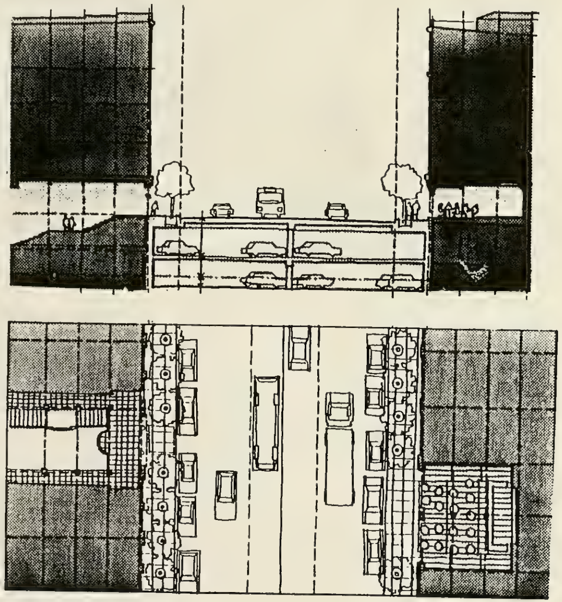
Buildings - Development along the streets is the single most important element to making the system work. The buildings organization and its effort to contribute to the two level network must be enforced.

Streetwalls (massing) - Buildings must make an active contribution to and take advantage of the two level system on all exposures. The following are massing guidelines explicitly applied to the building design.

- o Setbacks - The buildings must follow the consistent street setback to reinforce the urban pattern. Setbacks for urban plazas as front yards to the buildings will detract from spaces created as a result of the two level system.

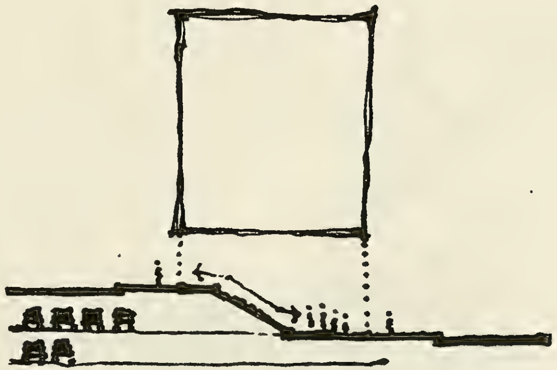


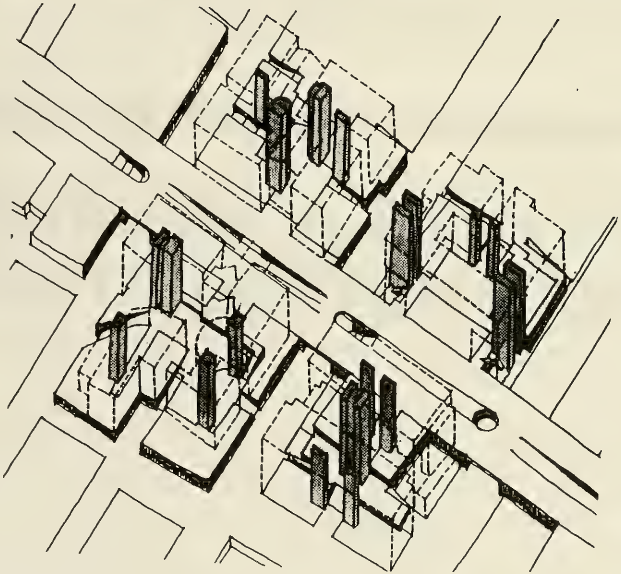
- Air-rights - Although a two level street system will create opportunities to develop air-rights structures over lower level streets (especially at the intersections), the opportunities to create open spaces and views and to reduce the length of building facades. Development in the public right-of- way beyond parking under elevated streets should be discouraged.



John Dale

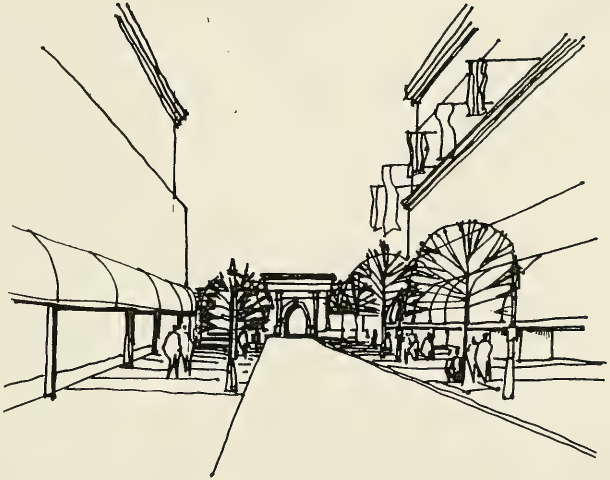
- Vertical circulation - The two level street system will inadvertently create buildings that have street frontages on two different levels. The internal organization of new buildings should allow for public access on these different levels and directly connect these entries by way of public lobbies. This can be accommodated by monumental stairways, two level lobbies, or central atrium spaces.





John Dale

- Parking and service access - The street organization in this district should be organized to have specific accessways designated for service and parking. Most probably on the lower level street, this setup will allow for easier pedestrian and vehicular movement into the building due to fewer conflicts. Any new development will be required to provide access via the designated streets.



SECTION II

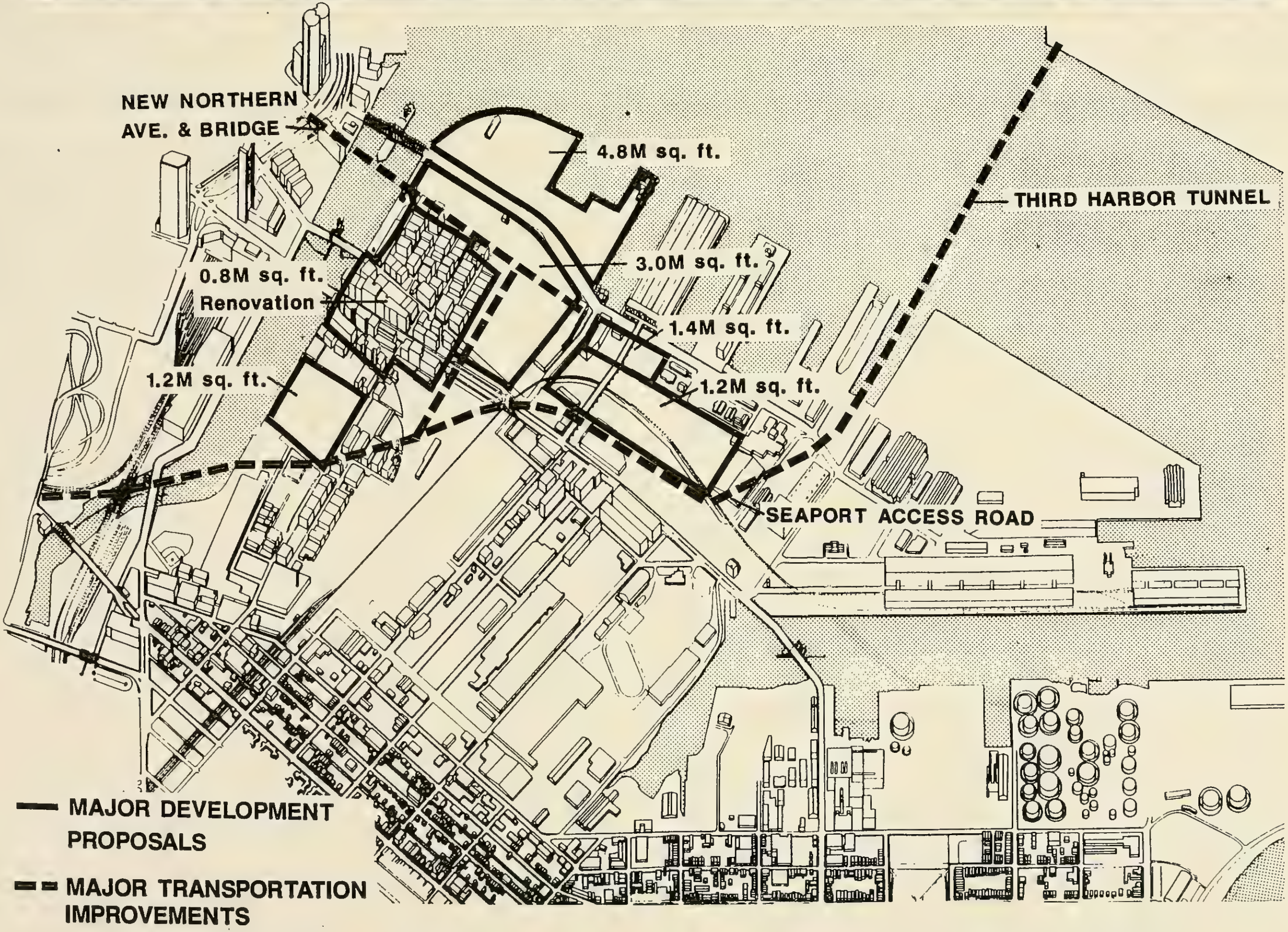
TOWARDS A PLAN FOR THE SOUTH BOSTON HARBORFRONT

INTRODUCTION

Need for a plan

The Fort Point Channel Study Area is expected to accommodate approximately 15 million square feet of development in the next 10 years. In conjunction with this development an addition 2 billion dollars in public improvements is planned. These development pressures suggest that a study or plan concentrating on the development opportunities and design potentials of the grade changes should be expanded to produce a more comprehensive planning effort.

Section II of this NEA Grant begins to address this larger objective by identifying what the main components of such a plan would encompass. Included are inventory analyses and alternative options for land use, district character, public open space, transportation and water related uses. Initial implementation strategy is also identified. This analysis is intended to be the first stage of a major comprehensive planning effort that will guide the development of the South Boston Harborfront.



MAJOR DEVELOPMENT PROPOSALS & MAJOR TRANSPORTATION IMPROVEMENTS

PERCEIVED MAJOR IMPACTS ON THE FT. PT. CHANNEL AREA

Proposed private development

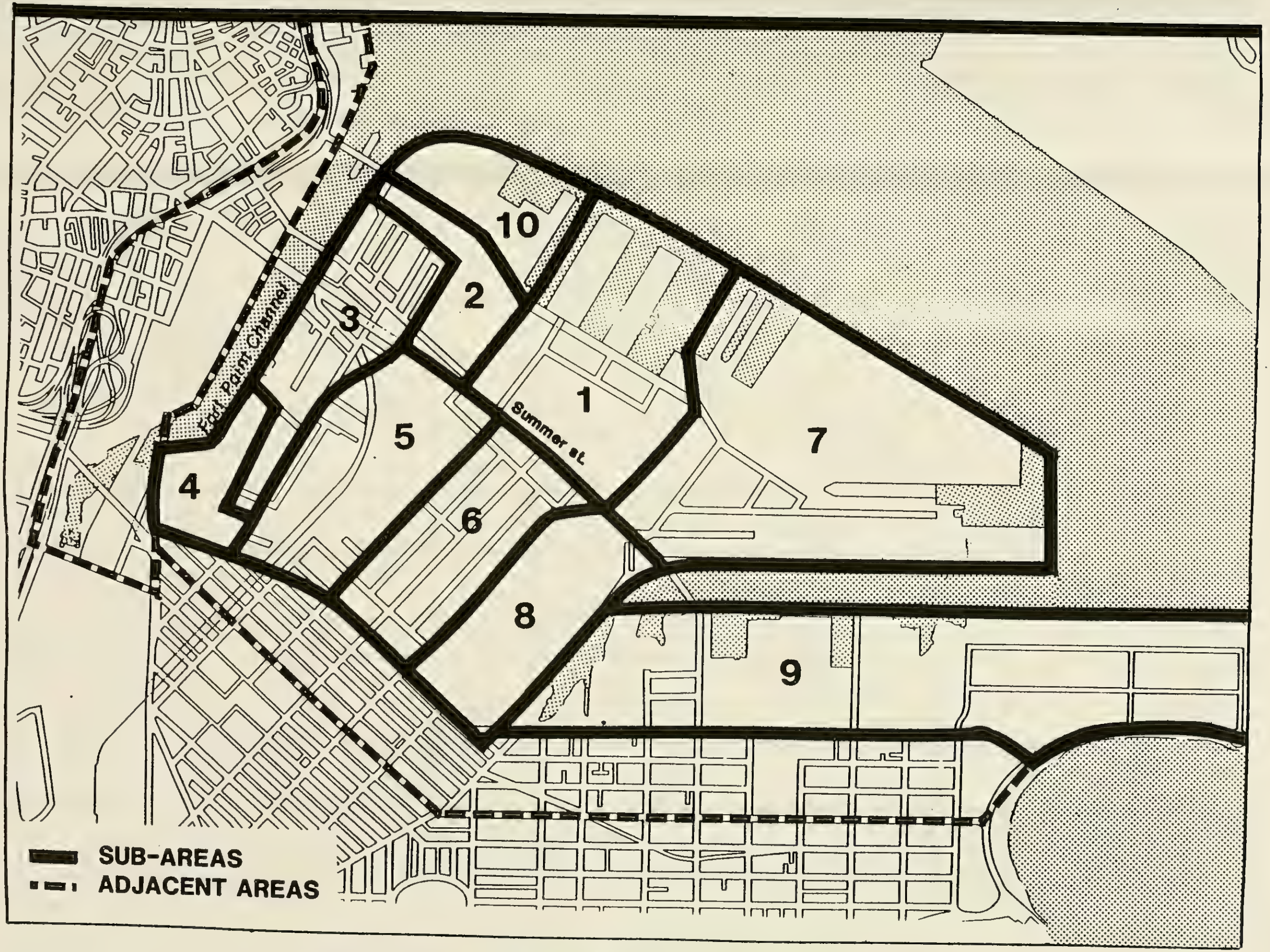
Major development projects are being planned for the area north of Summer Street in the South Boston Harborfront. Most of the proposed private developments are over 50,000 square feet given the existing large single ownership of land in the area. Some of them will develop as much as 25 acres (Fan Pier, Pier IV) which equals in site area to eight Back Bay blocks (alleys included). Most of this large piece of land are currently vacant or underutilized, therefore encouraging development.

a. Short-term (1985-1990). Recently finished projects include a Gillette addition and 752,000 square feet of commercial and exhibit use in the "World Trade Center" at Commonwealth Pier V. Proposed are: the EDIC Industrial Park with over 600,000 square feet of new light manufacturing, exhibit and office space; and the Boston South Industrial Park with 676,000 square feet of industrial/office space.

b. Long-term (1990-1995). Several projects are already in either design or planning process which will affect large parcels. Among them outstand the Fan Pier with 3,321,000 square feet of hotel, residential, commercial and parking. Pier IV with 1,737,000 square feet of the same land use. World Trade Center Phase II with 1,225,000 square feet of office and commercial space.

c. Potential (1995 on). Given the amount of underdeveloped and vacant land south of Summer Street, it is quite possible that it will be developed. Some parcels likely to be developed are ex Conrail land, Post Office and Boston Wharf's vacant land.

Following, there are maps and charts which are based on the EIR (Environmental Impact Report) done by SOM for the Fan Pier and Pier IV, and the "Communitas" land-use draft study done for Massport. The South Boston Harborfront (Fort Point Channel) area has been divided into 10 sub-areas which are determined mainly by large single ownership of land. Two adjacent areas have been identified which will impact the study area. (a) Downtown edge to the west and (b) South Boston transition zone to the south.



PROPOSED DEVELOPMENT SUB-AREAS

Sub areas	PROJECTS	Residential	Retail	Office & Exhibition	Hotel	Indus.	Open Space	Parking Spaces	Total
1	Massport Commonwealth Piers World Trade Center		200,000 Market Center	400,000 office 32,000 Conference 120,000 Exhibition				1000 spaces	752,000
	World Trade Expansion "World Atrium" /Commonwealth Flats		225,000 6sf	1,376,000 by 1990				2150 garage	1,376,000 by 1990
	Fish Pier 6 Gate House		18,000 Fish Market	128,000		200,000 Fish processing		275	346,000
2	McCourt/Cabot, Cabot & Forbes	1,000,000	500,000	1,500,000			5 acres	1800 Spaces	3,000,000
3	Boston Wharf Company Boston Wharf Annex	236,000 348 du		1,200,000 Planning stage		247,000		180 surface	1,436,000
4	Gillette Gillette Park					105,000 manufact. & research			105,000
5	United States Postal Office								no changes anticipated
6	Various Owners								no changes anticipated

PROPOSED DEVELOPMENT BY SUB-AREA (1995)

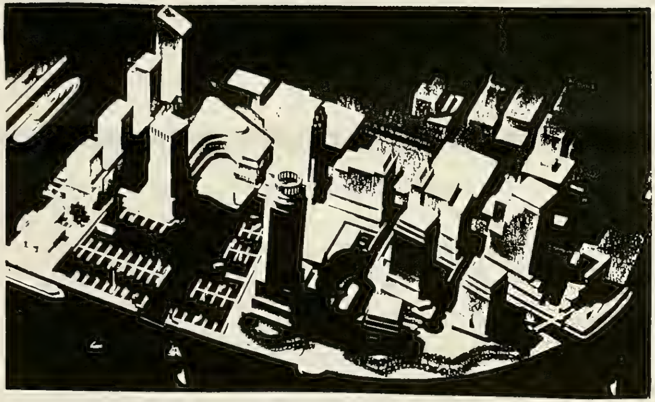
Sub areas	PROJECTS	Residential	Retail	Office & Exhibition	Hotel	Indus.	Open Space	Parking Spaces	Total
7	EDIC Renovation Building 114			550,000 Design Center		275,000 Section A		600 new spaces	825,000
	Harbor Gateway			200,000 Light Industrial and / or office					200,000
	Other Totals					150,000Light Industrial Fish Processing			150,000
	Boston Marine Industrial Park					675,000 Light Industrial Fish Processing			675,000
8	Ex US Naval Annex								no changes anticipated
9	Various Owners South Boston Industrial Park								
10	Athanas/Fan Pier	826,730	172,088	1,405,760	667,909		4.6 acres Cultural 110,000	2500 spaces	3,182,487
	Athanas/ Pier IV	598,655	79,351	692,637	269,637		3.4 acres	2650 spaces	1,640,474

PROPOSED DEVELOPMENT BY SUB-AREA (1995)

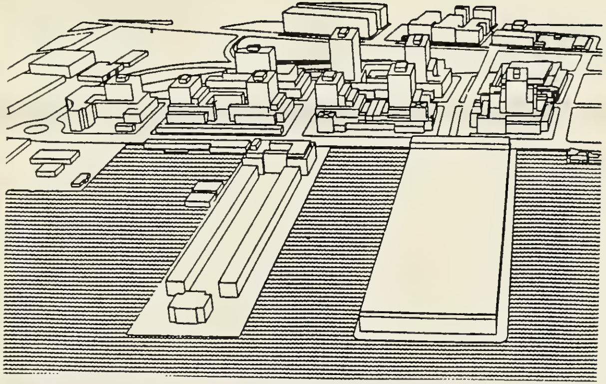
DEVELOPMENT BY 2000	SQUARE FOOTAGE	USES
Fan Pier	3,182,487	office, retail, hotel, residential
Pier 4	1,640,474	office, retail, hotel, residential
Boston Wharf Expansion	1,200,000	retail, office
McCourt/Cabot, Cabot & Forbes	3,000,000	retail, office
World Trade Expansion	1,376,000	office, exhibition, retail
Commonwealth Flats/ Massport	1,700,000	residential, maritime
Boston Fish Pier	346,000	office, retail, maritime
EDIC	200,000	light industrial, office
Renovation of empty space & small addition	1,000,000	office, retail, residential
TOTAL	13,644,961	

Total by use	8,163,576	commercial, office, retail, hotel
	4,325,385	residential
	1,046,000	light manufacturing/ maritime
	110,000	cultural
	10,555	parking spaces

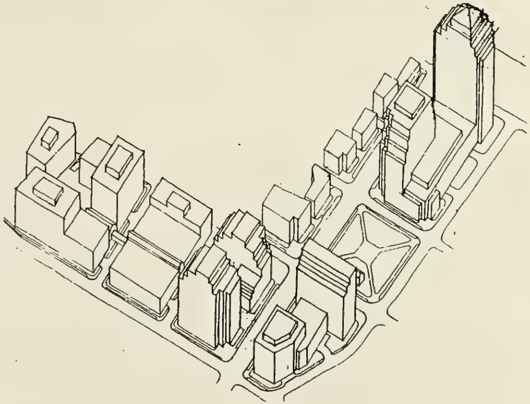
SUMMARY OF PROPOSED DEVELOPMENT



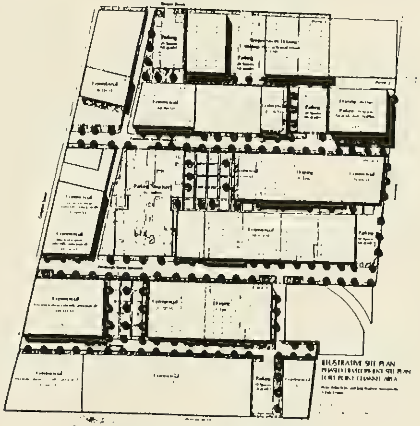
FAN PIER - PIER 4



MASSPORT / COMMONWEALTH FLATS



McCOURT / CABOT, CABOT & FORBES



BOSTON WHARF

PROPOSED DEVELOPMENTS

Proposed public improvemets

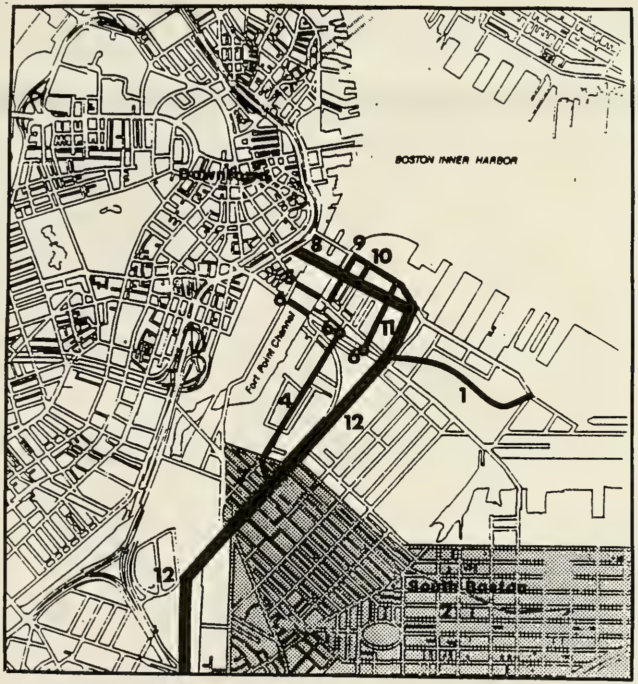
Considerable public investment in auto-related transportation improvements are being designed that will improve accessibility to the study area as well as ease some of the impacts on the adjacent residential community created by the proposed developments.

a. Short range roadway improvements (1985-1990). These improvements are part of the South Boston traffic plan that will solve existing problems. Traffic signals will be upgraded, streets repaved and bridges rehabilitated. But this plan also calls for the creation of a new South Boston By-pass road that uses the right of way of the remaining railroad tracks and will absorb most of the truck traffic to the piers.
The creation of a New Northern Avenue and bridge; this fixed-span bridge will replace the old movable-span bridge on a new southern location.

b. Long range roadway improvements (1990-1995): A major $2.6 billion proposal that encompasses the depression of the Central Artery ($1.3 billion), the provision of the Seaport Access Road ($.6 billion) and the construction of the Third Harbor Tunnel across the Boston Harbor ($.7 billion) is going to improve dramatically, when built, the accessibility towards and through the area. Of special importance for the South Boston Harborfront area is the construction of the Seaport Access Road which will provide an easy connection to the Masspike and Southeast Expressway. Without these major improvements most of the planned large-scale development becomes infeasible due to traffic-generated problems.

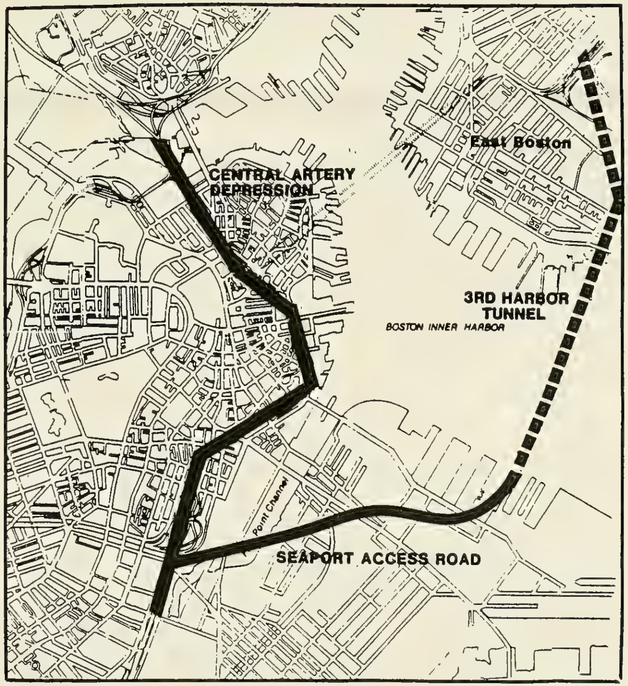
c. Potential Improvements (1990 on). some thought has been given to mass transit alternatives for the area thereby improving service while discouraging auto access. Some studies show possible alternatives such as a Red Line diversion to the area, a Blue Line extension to the airport and the introduction of lighter and less costly "People Movers" loops into the study area from South Station (see Transportation Proposals chapter).
Current studies include a green line extension from Boylston station to the area north of Summer Street via South Station.

Short range Improvements



1. Haul Road
2. Neighborhood Traffic Improvements
3. New/upgraded signals
   - Harbor & Summer
   - "D" & West Seventh
   - Dorchester Ave. & Fr. Anthony Sonjin Way & Maj. O'Connor Way
   - "E" & West Third
   - East Eighth & L
   - L & Fifth Street
4. Repave "A" Street
5. Rehab/Reconstr. Congress Street Bridge
6. Rehab/Reconstr. Summer Street Bridge
7. Rehab/Reconstr. West 4th/5th/6th Street Bridges
8. New Northern Avenue Bridge
9. Relocated (new) Northern Avenue, Sleeper Street and Seaport Access Connector between new & old Northern Avenue
10. Connector Roads
    - Pittsburgh Street, Farnsworth Street, and old Northern Avenue
11. Seaport Access Connector Roads
12. South Boston By-pass

Long range Improvements



- Seaport Access Rd. (approx. .6 Bil.)
- Third Harbor Tunnel (approx. .7 Bil.)
- Central Artery Depression (1.3 B.)

Total Cost 2.6 B.

ROADWAY IMPROVEMENT PROPOSAL

PLAN COMPONENTS

This study as the first stage towards a Masterplan for the South Boston Harborfront-Fort Point Channel Area gathers some basic Inventory information. Based on that data and the proposed development trends, the study will explore different options for the future development of the area.

The Inventory is divided in 6 main Plan Components:

Chapters 1.0 Land Use
2.0 District Character
3.0 Public Open Space
4.0 Transportation
5.0 Water Related Uses
6.0 Implementation

Though all the Plan Components are interrelated the following section shows both existing conditions and options for each component separately,

It is important to note that the purpose of this study is to show alternative options for guiding the development of the area instead of arriving to a final unique Masterplan.

1.0
LAND USE

1.1 EXISTING CONDITIONS

Fort Point Channel is located between Boston and the northern section of South Boston. Land surrounding the Channel is devoted predominantly to commercial, industrial and transportation uses. Although the area has no formal designation as a neighborhood, it is perceived as a distinct land use area adjacent to downtown Boston.

The South Station area is occupied mostly by large public facilities, including several transportation facilities undergoing renovation. Over 3.5 million riders each year use the railroad and commuter rail facilities at South Station. The South Postal Annex, Boston's central mail distribution facility located adjacent to South Station generates 900 truck trips per week and employs 9,800 people. Also located in the area are the Trailways Bus Station, and MBTA subway car storage.

Until recently the Boston side of Fort Point Channel was dominated by warehouses and vacant land used for parking. Recently, the area has been the site of significant office development; from the Harbor Towers complex to the Stone and Webster Building on Summer Street, the area is almost entirely devoted to professional office space, reflecting its location on the periphery of the Financial District. (Although the Central Artery west of Atlantic Avenue remains a barrier to the downtown Financial District, its influence as a dividing line has declined as more office buildings have been built or renovated east of it). The James Hook Company, a wholesaler of live lobsters, also located in the area, is an exception to the general pattern of activity and occupies a substantial underutilized developable parcel.

Rents are approaching $30 per square foot per year in rehabilitated space, and land values are approximately $200 per square foot. A small number of retail establishments serving office employees are located on the ground floors of several office buildings. Approximately 12,000 employees work in over 3 million square feet of office space, many of them parking across the Fort Point Channel in South Boston. The area generates about 100 truck trips per week.

The South Boston side of Fort Point Channel is characterized by mixed warehousing, commercial and industrial uses in older (late 19th century, 20th century) buildings of one to ten stories. There are also a number of abandoned rail yards, many of which are used as parking lots. A few marine-related companies remain along the Channel bulkhead. Museum Wharf, which houses the Children's Museum, has been landscaped as a park with a public access easement held by the Boston Parks and Recreation Commission. The Museum attracts over 500,000 visitors annually.

Industrial uses in this area include light manufacturing, printing and publishing, clothing manufacturing, wallcovering distribution, and seafood processing. As in the South End,

these industries are attracted by the area's central location and inexpensive space which more than compensates for poor loading facilities and multi-story building layout. (The Gillette Company, with its own modern facilities, is an important exception.) Rents of $2.50-$5.00 per square foot per year are typical of these buildings.

A number of buildings have loading docks which face directly onto Summer, Congress, or A Streets, or onto side streets. On-street loading disrupts the area's traffic circulation. Approximately 1,000 truck trips occur weekly in this area.

Commercial uses include furniture and houseware retailers, art galleries, studios, restaurants, commercial parking lots, and office space. A small number of buildings on Sleeper and A Streets have been converted to residential use.

As with the industrial users, the area's low cost space is attractive to retailers. Restaurants and offices are attracted to this section of Fort Point Channel because of its proximity to downtown Boston, and pay rentals approaching $19 per square foot per year in renovated space. For condominium conversion and some office uses, the historic character of the area and its proximity to the Channel itself are significant amenities.

The Channel area, a potential National Register Historic District, has been the focus of several marine-oriented recreational land use concepts. The Boston Harbor Associates, Boston Educational Marine Exchange, Boston Conservation Commission, Sierra Club, and other groups have presented concept plans or voiced support for such plans. Access problems and poor water quality have hampered revitalization of the area, particularly for recreation uses.

The major renovations in the area have been the 850,000 square foot World Trade Center and Design Center which opened new office, exhibition and conference space in mid-1986.

The Fort Point Channel has a concentration of artist live/work studios in renovated Boston Wharf loft buildings. This community of approximately 300 artists constitute the largest colony of artists in New England. In addition to the artist residences, The Dockside Condominium tenants constitute the major residential component of the district. The largest segment of the South Boston community is on the section of the peninsula south of Second Street. This area of historic South Boston has a population that exceeds 30,000 residents.

Major Land-uses

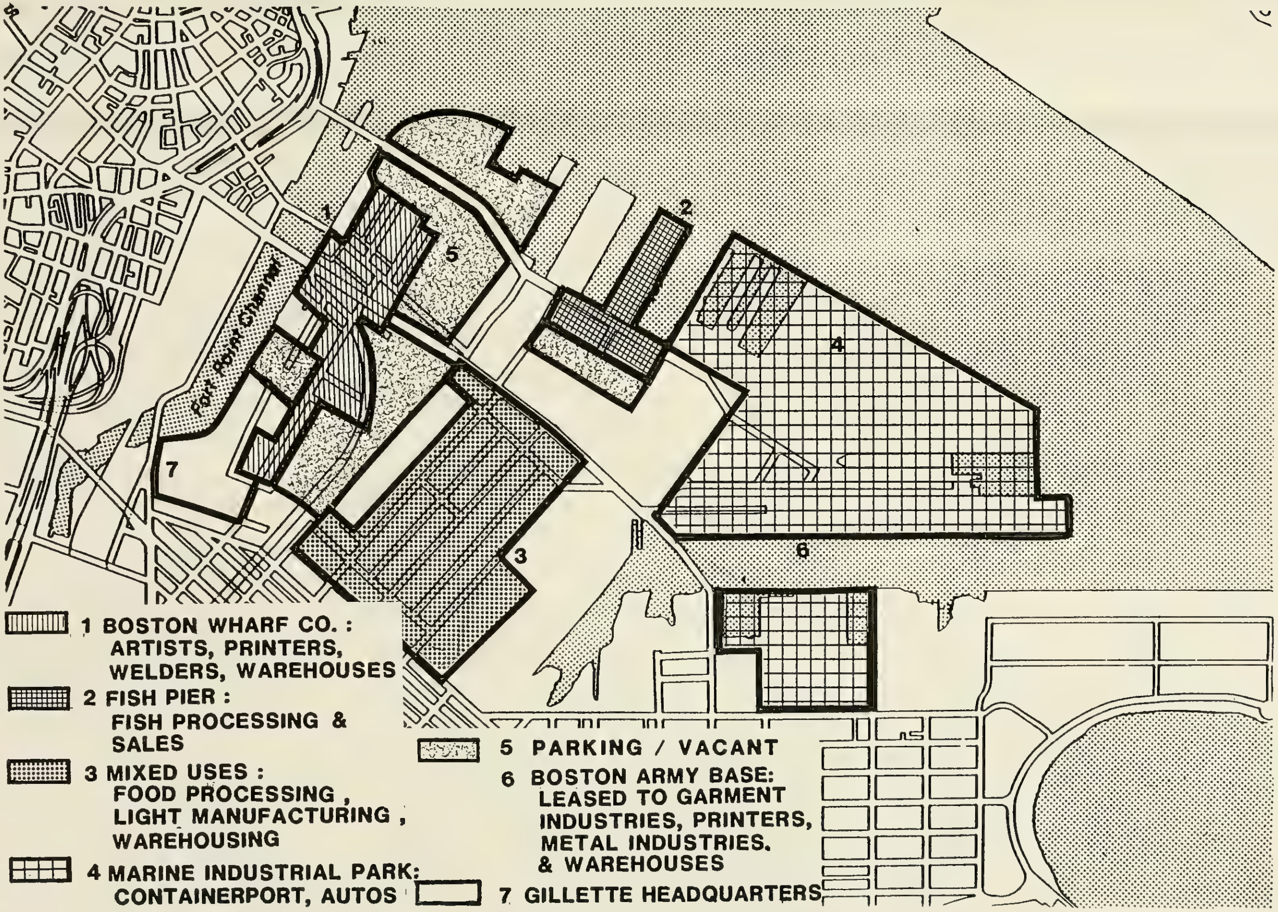
LIGHT MANUF./COMMERCIAL	480 ACRES	64%
RESIDENTIAL (ARTISTS)	8 ACRES	1%
VACANT/UNDERUTILIZED	262 ACRES	35%
TOTAL NET WITHOUT STREETS	750 ACRES	

Manufacturing

Between 1977 and 1981, South Boston lost 988 manufacturing jobs (9%). This net employment decline resulting primarily from 37 firms with 1,482 workers which moved from Boston and 56 firms with 735 workers which ceased operations. While the majority of these firms were small to mid-sized, seven had 100 or more employees. Two publishers with 330 workers, as well as one printer with 100 jobs moved from Boston. One poultry company with 120 workers and a ship builder with 500 persons ceased operations. Between 1979 and 1983, 13 firms with 239 workers moved to another boston neighborhood. Ten South Boston firms moved within South Boston to EDIC/Boston's Boston Marine Industrial Park.

These losses were somewhat offset by 25 firms with 359 workers that started operation in South Boston or moved to South Boston from outside Boston. Twenty-nine firms with 938 workers moved to South Boston from other City neighborhoods.

Long the traditional location of manufacturing industries, South Boston continues with a stable and substantial share of both firms and employment. South Boston's 223 firms and 10,608 employees in 1983 represent the greatest percentage of firms (24%) and workers (22%) in Boston. The ten firms in South Boston with 150+ workers employed 4,900 persons (see Table 16). This is the greatest concentration of large firms in the City.



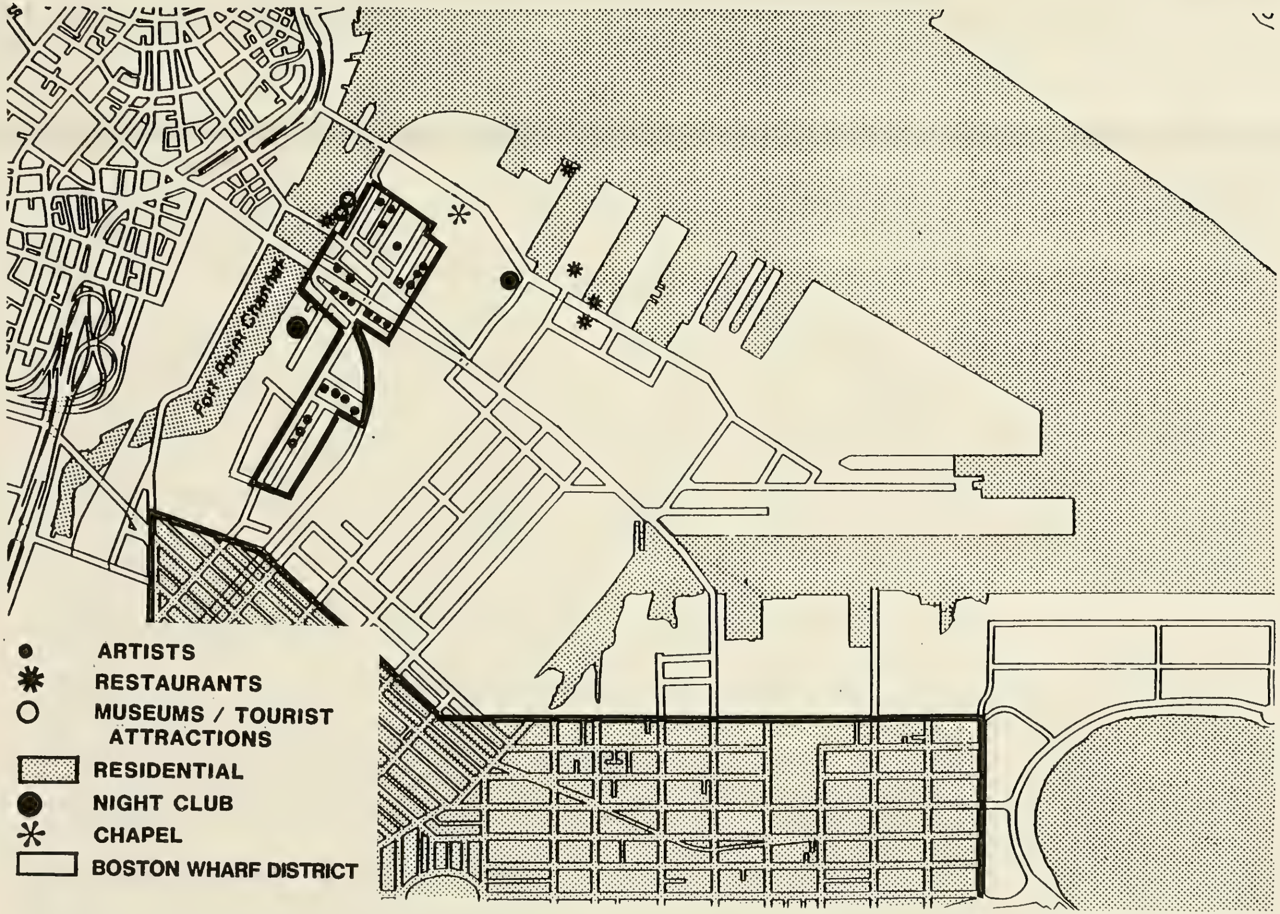
MAJOR LAND USERS

Specialty and Residential

South Boston's largest industries include fabricated metals (72% of the industry in Boston, including one metal fabricating company alone accounting for 65%), electrical machinery (26%), apparel (26%), printing and publishing (17%), and food products (15%).

The average firm's size in South Boston is 41 workers, below Boston's average of 51. Small firms (1-19 employees) comprise 37% of South Boston's firms, yet the large firms dominate several industries: three printing and publishing firms employ 665 workers, two firms in electrical machinery employ 605 workers, as well as the aforementioned single firm in fabricated metals.

The area has a unique concentration of artists that live and work mostly in the Boston Wharf area. Approximately 300 artists constitute the largest colony of artists in New England. Besides the Dockside Condominium tenants, the artists constitute the major residential component of the area. The 30,000 plus residents of South Boston live primarily south of Second Street.



SPECIALTY AND RESIDENTIAL

Large scale land ownership

The 700 acres study area is characterized by having large pieces of land in single-ownership. Furthermore, most of that land is either vacant or underdeveloped. The main landowners are:

1. Boston Wharf: owns 33 acres and is the densest district in the study area by having 80 buildings for a total of 3.8 million square feet of gross floor space.

2. Cabot, Cabot & Forbes/Mc. Court: 23 acres of vacant land that includes some parking. New Northern Avenue will take part of the property.

3. Athanas Fan Pier and Pier IV: 16.5 acres of Fan Pier and 16.4 acres of Pier IV, for a total of 33 acres devoted primarily to parking except for the Pier IV restaurant. Proposed projects for the entire property are currently under review process.

4. Massport: the biggest landowner in the area with approximately 230 acres of land.

   Fish Pier: 1.7 acres with 240,000 sq. ft. built
   Pier V: 11 acres
   Commonwealth Flats: 50 acres
   South Boston Industrial Park: 32 acres
   Navy recreation site: 15.8 acres with 14,000 sq. ft. built

   Subaru operation site: 37 acres
   Ex-Navy Yard: 8.4 acres
   Containerport: 75 acres

5. Gillette: owns 25 acres and has 2.4 million square feet built. 11 acres are used for parking and 2.6 acres for open space.

6. Post Office: owns 23.4 acres of which 16.6 are vacant and devoted to parking for employees. (Ex Penn Central land)

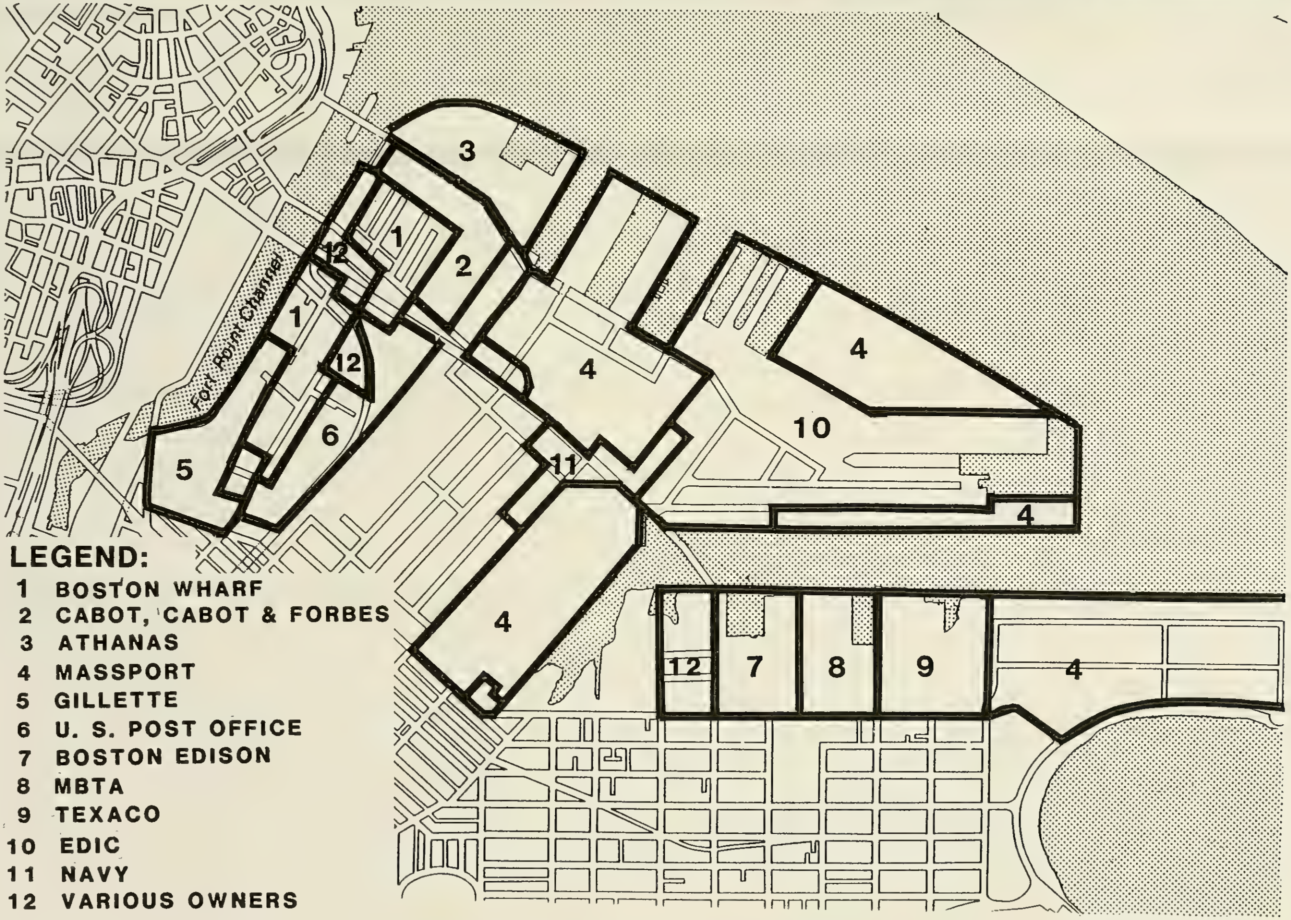
7. Boston Edison: approximately 23 acres.

8. MBTA: approximately 23 acres.

9. Texaco: approximately 28 acres.

10. EDIC: the second largest landowner in the area owns approximately 100 acres mostly devoted to light manufacturing.

11. Navy: used to be a large owner of land. Now owns approximately 11.7 acres.

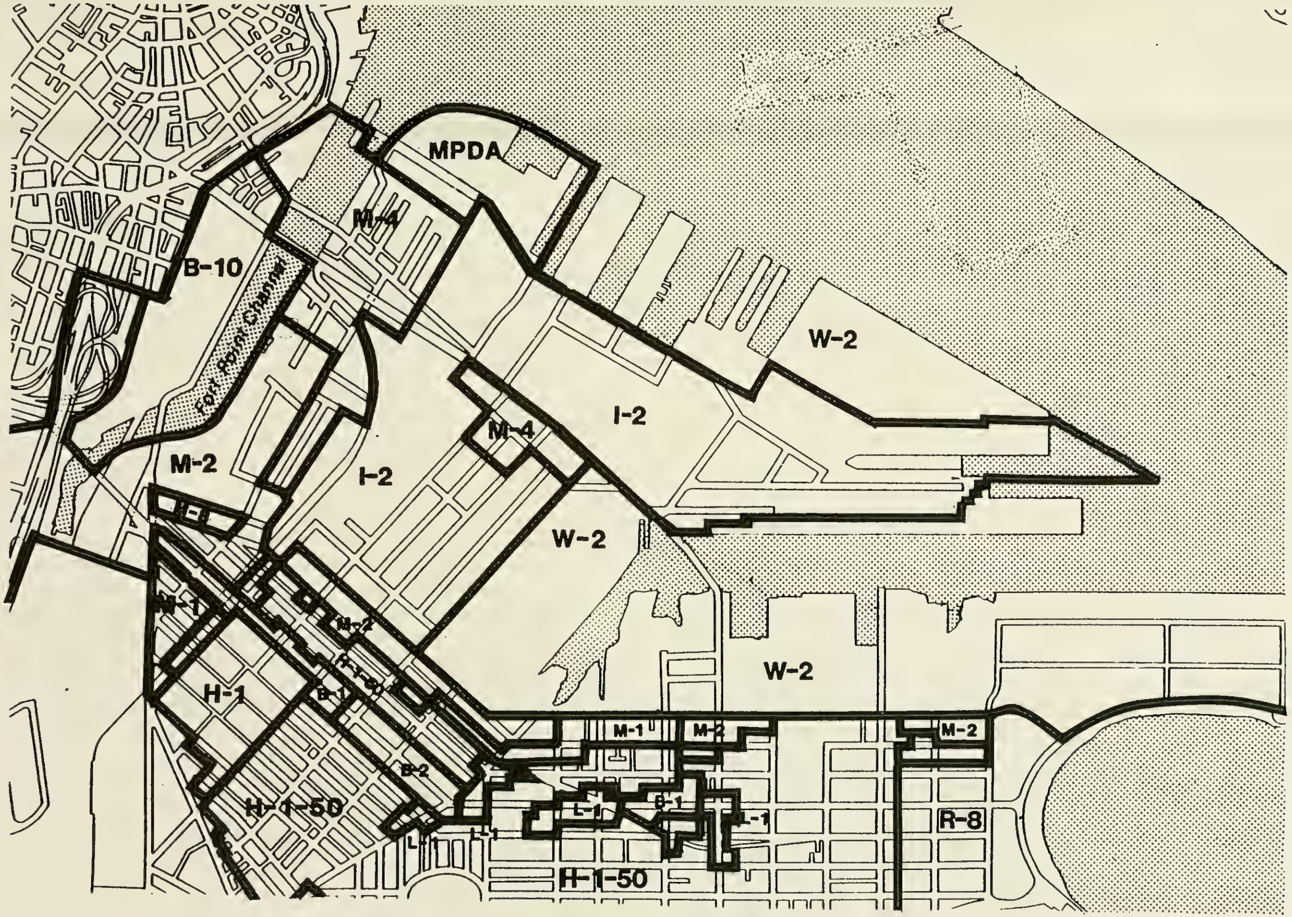


LARGE-SCALE LAND OWNERSHIP

Current zoning

Most of the study area is zoned waterfront (W-2) or industrial (1-2) with only 2 areas of manufacturing (M-4) (along Summer Street). Recently the Fan Piers have been rezoned from W-2 to a MPDA area (Master Planned Development Area) allowing a FAR = 4.75 and mixed-uses. Conflicts have been created between the existing light manufacturing uses and the residential South Boston. Heavy truck traffic generated by the manufacturing uses are taking over the residential streets (see the Transportation section). Future residential and commercial development are most likely to further compound the use related conflicts. A comprehensive analysis of the current zoning is needed so as to respond to the development trends and opportunities, to preserve and consolidate the residential areas and to mitigate nuisances created by the direct relationships of conflict uses.

Recently the downtown Restricted Parking zone was expanded to include the entire South Boston peninsula.



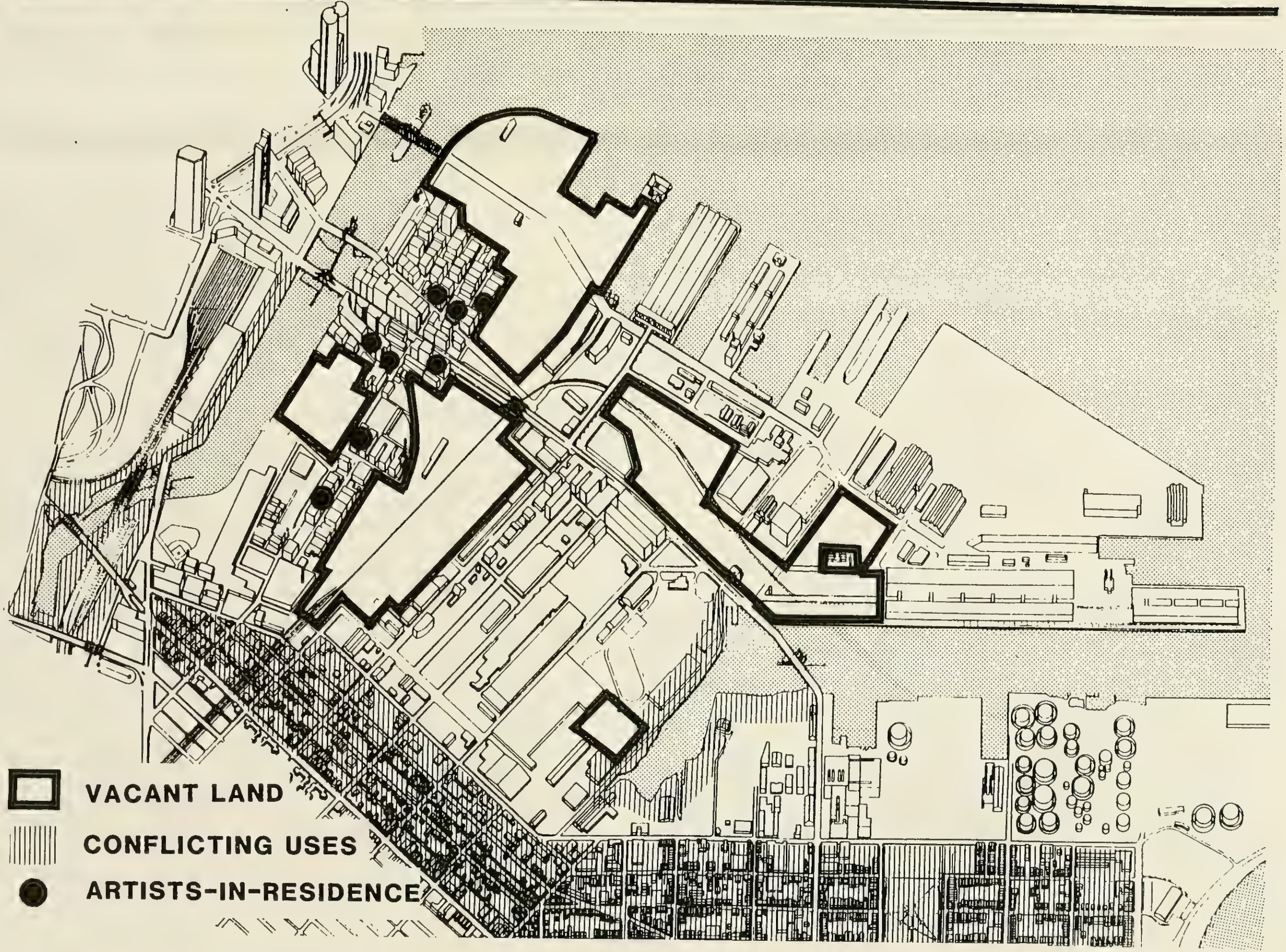
ZONING DISTRICTS

Vacant, underutilized lands and conflicting uses

Currently, the Fort Point Channel Study Area has over 100 acres of vacant land that is mostly used for surface parking. There are around 4,000 spaces serving primarily the Financial district.

Large tracts of land are used for the storage of vehicles (Army, Subaru, Toyota, Rider Truck rental, Greyhound buses, etc.) and warehousing. As mentioned previously, these uses generate heavy truck traffic that usually bypasses the designated truck routes and crosses through the residential neighborhood. Given the lack of a comprehensive street pattern, and the state of disrepair of the bridges connecting to downtown and the Expressway, most of the land-uses that generate truck traffic need to be more carefully rezoned.

The large artist population may eventually face displacement due to the land values increasing in response to the area's new development. Large projects are planned for the area north of the Boston Wharf properties on the Fan Piers and east on the McCourt property and Commonwealth Flats. A strategy for preserving some of the existing uses threatened by gentrification is needed.



VACANT, UNDERUTILIZED LAND AND CONFLICTING USES

1.2 TOWARD A ROLE FOR THE AREA

Land-use trends

To have a clear definition of the alternative roles for Fort Point Channel South Boston Harborfront, we have to define who is going to live in this area. The population projection is the result of the projection of jobs in Boston and Downtown in the next 5-10 years and the "ideal population" seen by us today. Having the future population profile early in this instance, we can detail the profile of housing, sizes and categories, related to income. Then, with a feasibility study of income approach and marketing approach, we can have the "real picture."

Population Based on Jobs Projection for 1985-1980

The substantial projection of jobs in Boston and Downtown is in services, construction, manufacturing and finance. The income, except in retail, hotel and medical assistance, is higher than $20,000 a year. That means that if, from a total of 32,000 jobs gained in Downtown through 1990, 25 percent were gained by people living in Fort Point Channel, it would mean 8,000 jobs. Taking in consideration an average of 2.0 jobs per household would mean having 4,000 dwelling units for people living in Fort Point Channel and working in Downtown. For the years 1990-2000, the job projection is 33,000 jobs, and with the same proportion, 25 percent for people living in Fort Point Channel, would mean another 4,000 dwelling units. Summarizing, it means that at least 8,000 employees living in Fort Point Channel Renewal will work in Downtown or nearby.

Having the monthly housing payment available for each category, we can find the proportion of high- and middle-income dwelling units and moderate- and low-income units.

PERCENTAGE OF NUMBER OF JOBS RELATED TO MONTHLY INCOME

Category	Yearly Wage Average for 1985	Percentage and Numbers for 1985-1990	Percentage and Numbers for 1990-1995/2000
Low category	$11,000 - 19,000	18%= 810 units	28%=1,260 units
Middle category	20,000 - 29,000	69%=3,100 units	53%=2,390 units
High category	30,000 - more	13%= 590 units	19%= 850 units

Above we show the proportion of dwelling units to be built for the number of jobs, or in other words: between 1985 and 1990 we need 810 low-income units, 3,100 middle-income and 590 high-income units. Between the years 1990-1995, we need 1,260 low-income units, 2,390 middle-income units, and 850 high-income units. (Data from "Job Outlook in Boston Area," Jeffrey Brown, BRA Research Department, October 1985 and "Boston Employment," Jeffrey Brown, April 1985.)

Summary Findings

The first preliminary data on the projection of housing in Fort Point Channel showing the need of 8,000 units to be achieved in two phases between 1985-1990 and 1990-1995/2000 will be categorized as follows:

Phase I 1985-1990

For two workers per household, there will be 810 low-income units, with "monthly housing payment available" between $415 and $750; 3,100 units with "monthly housing payment available" between $833 and $1,170; 590 units with "monthly housing payment available" between $1,250 and $1,670.

For the same years, but with one worker for household, there will be 810 units with "mhpa" between $210 and $375; 3,100 units "mhpa" between $415 and $585; 590 units with "mhpa" between $625 and $835.

Phase II 1990-1995/2000

There will be (for two workers per household) 1,260 units with "mpha" between $415 and $750; 2,390 units with "mpha" between $833 and $1,170; 850 units between $1,250 and $1,670.

For one worker per household, there will be 1,260 units with "mpha" between $210 and $375; 2,390 units with "mpha" between $415 and $585 and 850 units between $625 and $835.

These data mean that a feasibility study should be done on the possible future development to determine if the design plan and the potential "monthly housing payment available" be in the same category and the numbers of units for each category not be much different.

Future Land Use

Although Fort Point Channel South Boston Harborfront covers an area of about 750 acres, not all the site will change use or form. We can identify six main land uses in the future as following:

(a) existing structures as the buildings on Summer and Congress Streets, Boston Wharf and the Gillette Corp.;

(b) large open space for recreation, as parks, gardens and squares;

(c) large areas of residential use with various types of buildings;

(d) large areas of mixed use residential/ commercial, with various proportions between them;

(e) large areas of commercial use as retail, office, light/high tech industry, entertainment; and

(f) nonutilized areas for future development and for keeping the existing light manufacturing and warehousing.

Conclusions and main issues

1. The Fort Point Channel Area South Boston Harborfront serves a number of important functions today and offers opportunities for additional roles in the future. It can play significant part in the complex organization of the city center, in the harbor, and in the parks system, and it can help to provide improved places to work and live.

2. The Fort Point Channel Area, because of its location and the size of its under-developed acreage, provides an exceptional opportunity to expand downtown uses, reducing development pressure in the Financial District and adding special uses and amenities to the city Center.

3. The Fort Point Channel Area can become a new branch with the Boston Wharf Company taking on a specialized role and the vacant railyards areas beyond serving a new segment of the office market, perhaps mixed with high-tech/R&D. Here is an opportunity to create an exciting new district with an urban character which grows out of its harbor-side location. Although vacant, the development sites have inherent qualities which can structure the new urban pattern.

Special Considerations:

- How parts of the Fort Point Channel Area might contribute to reducing office development pressure in the Central Business District and to keeping back office and secondary office uses in Boston. How office uses might be developed without adversely affecting the availability of space and affordable rents for other uses such as the printers, manufacturers, artists, and water-dependant uses.

- What opportunities there might be for institutional uses which would contribute to the vitality of the district and serve public needs.

- The form of retail which would be desirable to support existing and anticipated uses and how it might add to the convenience and enjoyment for people who work, live, and visit in the district.

- How convention, tourist, and hotel facilities might contribute to the vitality of the district.

- How development in the Fort Point Channel Area might help to expand Boston's housing stock, especially low and moderate cost housing.

1.3 ALTERNATIVE ROLES AND LAND-USES FOR THE STUDY AREA

Conceptual alternatives

In studying an area as large as the Fort Point Channel/South Boston area, and in preparation for a comprehensive effort, alternative visions for its future need to be explored. For the purpose of speculating about means of developing the area, two general and several sub-alternatives were generated. These posed fundamentally different objectives for the role that the Fort Point Channel would play in Boston's continuing evolution, and thus imply fundamentally different patterns of development:

Alternative A (examined as A1 and A2

These alternatives suggest the need for identifying a new boundary for downtown core expansion. With large-scale mixed-use development proposals beginning to leap across the Fort Point Channel - a traditional boundary for the downtown core - the problem of delimiting downtown expansion is heightened. Alternative A1 illustrates the possibility of using the railroad yards to the east of the Boston Wharf Co. land, in conjunction with the Seaport Access Road, as an area for higher density development, and as an edge to a lower intensity of use in the Commonwealth Flats and the remainder of the study area. Alternative A2 examines the possibility of creating a park and open space system as a boundary and a common ground between downtown expansion from the west and residential South Boston expansion from the East.

Alternative B

This alternative projects a 'new town in town' concept. As opposed to letting the downtown core simply expand, in a potentially undifferentiated way, into the Fort Point Channel area, there is an opportunity to establish a new district center, with its own character, sense of identity, and mixture of commercial and residential uses.

Alternative A1: A 'Tall-Spine' Boundary for Downtown Expansion

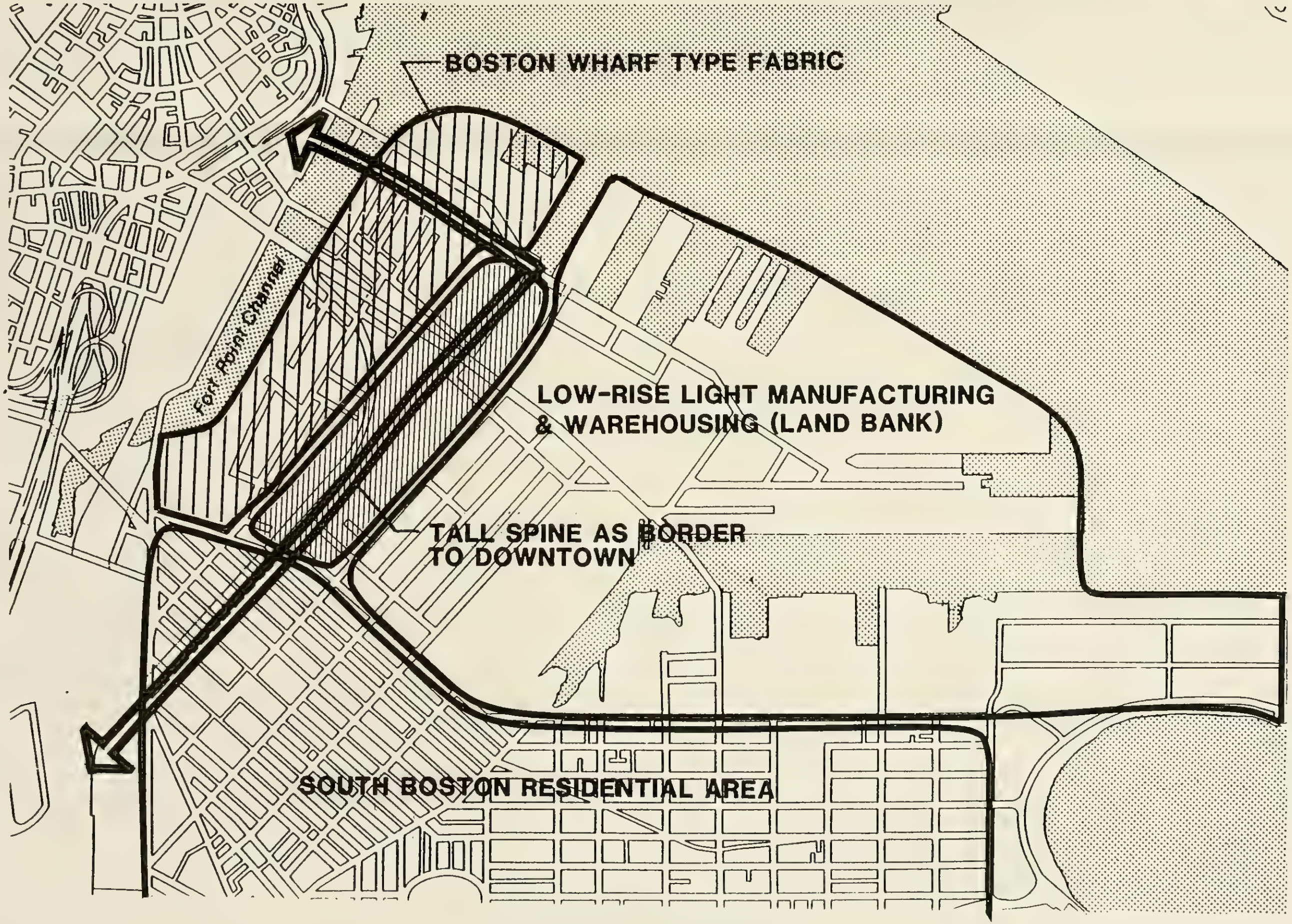
The large abandoned railroad yards, currently out as a kind of seam, between the build-up fabric of the Boston Wharf district, and the light manufacturing areas of the Commonwealth Flats and the Fargo and Bullock Street areas. A portion of this area will have to accommodate the Seaport Access Road and Third Harbor Crossing. The remainder could be zoned for higher density development. The condition is analogous to the Tall Spine in the Back Bay, also an area of more intense commercial and mixed-use development running parallel to rail lines and or major road (the Massachusetts Turnpike), but also serving as a boundary between the fabrics of the Back Bay and the South End.

Advantages:

- o Physically contain and provide a visible boundary for the high-density expansion of the downtown core.
- o Allow the eastern portions of the study area to develop more slowly while continuing to accommodate existing uses and businesses and residential patterns.
- o As with the Massachusetts Turnpike, coordinate large infrastructure (such as the Third Harbor Crossing) with higher density development able to absorb air-rights premiums.
- o Accommodate large-scale development in a fairly contained area as a way of enhancing the urban amenities and characteristics of the Boston Wharf area, rather than disperse large-scale development in an uncoordinated fashion throughout the study area.

Disadvantages:

- o Establish what may seem an artificial, and possibly difficult to sustain physical boundary between higher density and lower density development patterns.
- o Difficulty of precisely coordinating the engineering of the Third Harbor Crossing with private development.



ALTERNATIVE A.1

Alternative A2: A Major New Park as Boundary

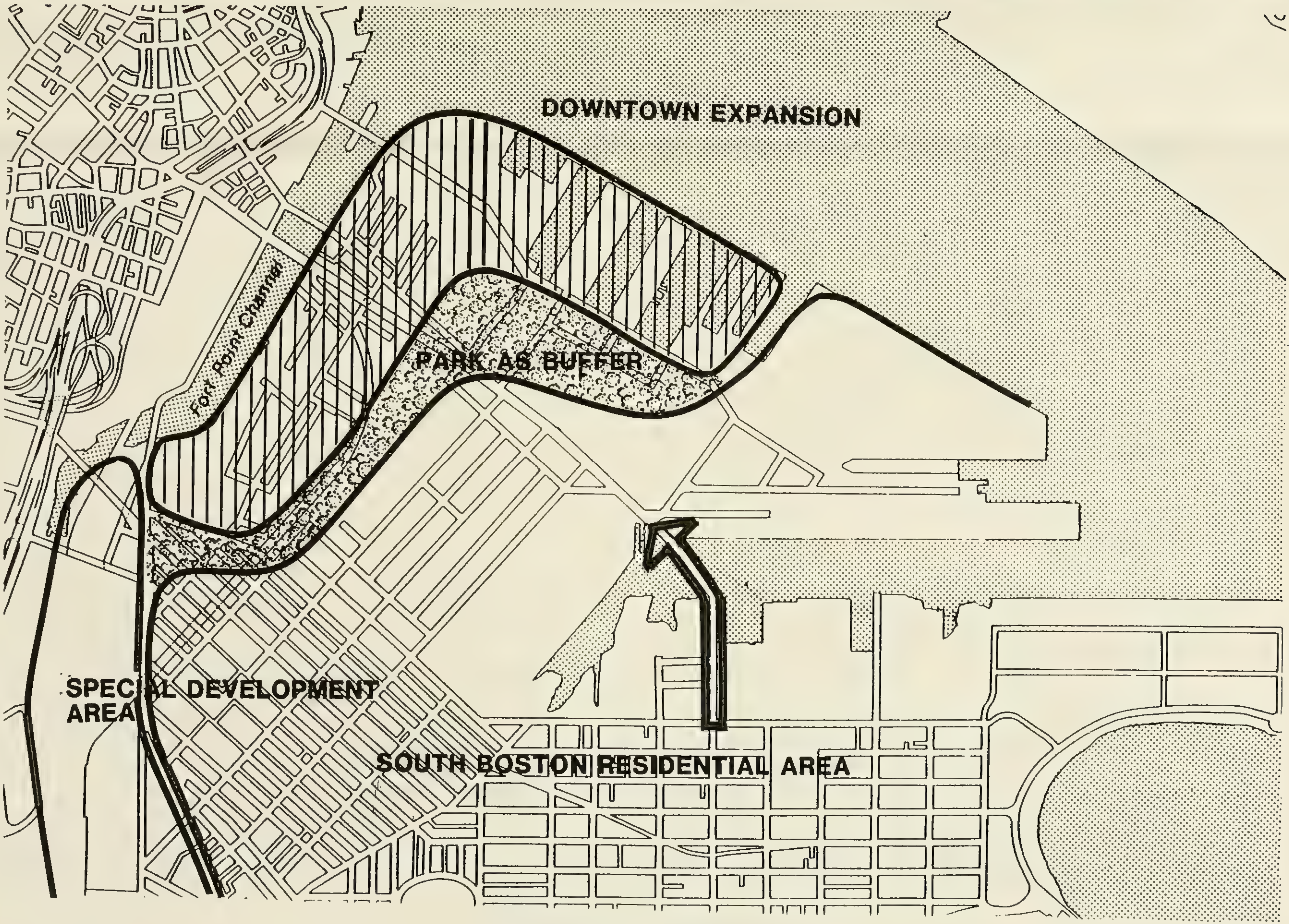
Many highways cutting through urban areas leave unsightly scars and edges difficult to develop. The Third Harbor Crossing, being planned as a largely at grade and open channel roadway, has such a negative potential. However, if planned in conjunction with a new open space network the highway could become a part of a pleasant boundary between the expansion of the downtown core across the Fort Point Channel, and the equally necessary expansion of the residential areas and amenities of South Boston.

Advantages

- Contain and provide a physical boundary for the high-density expansion of the downtown core, and, therefore, encourage the expansion of the residential areas of South Boston.
- Provide a new regional amenity in the form of a new park with access to the harbor.
- Use park space and recreational activity as a shared border between primarily commercial and primarily residential areas.
- Diminish the potentially negative imports of the highway alignment leading to the Third Harbor Tunnel.

Disadvantages

- Cost of burying larger segments of the Third Harbor Crossing and its approach roads.
- Difficulty of coordinating the engineering of the road and the park design.
- Difficulty of much wider land-taking to accommodate the park and highway alignments.



ALTERNATIVE A.2

Alternative B: New Town in Town

Proposition of a new town plan for Fort Point Channel. The essence of the plan is balanced growth. The balance is achieved through a careful mix of the elements consistently found in thriving communities. They include: civic amenities, such as an extension of Olmsted's famous Emerald Necklace park system; public institutions that give form and substance to the highest aspirations of Boston's citizens; housing to satisfy a wide range of family and individual desires, commercial and industrial expansion that provides employment and public benefits, and substantial improvements in both mass transit and automobile access and parking. The guiding principles of the plan are respect for existing social and institutional values, retention of the valuable buildings, streets, and land uses, and appreciations of scale of adjacent neighborhoods and geographic features.

The underused industrial area of Fort Point Channel could become a modern technopolis organized around an open space system. Over seven-thousand residential units in triple-decker, row-house, mid-rise, and tall buildings could be offered through rehabilitation and new construction. More than six-million square feet of high-tech commercial space could provide twenty-five thousand jobs, and expansion of industrial, hotel, and maritime uses will create an additional seven thousand jobs. The third harbor crossing, a tunnel to the airport relieving congestion on the Central Artery, could include interchanges at Fort Point Channel that will provide access for automobiles to the area, and parking garages for three thousand cars, and could divert truck traffic from residential streets. MBTA Blue Line and Red Line extensions could improve downtown mass transportation and offer added access to the area, while transportation within the district could be enhanced by a light-rail or people-mover system.

The objectives of the New Town Plan could be achieved through a creative mix of implementation measures involving public and private sources working together to secure Tax Increment Financing for public improvements, Industrial Revenue Bonds for development, federal grants for transportation, and citizen participation to guarantee civic goals.

ZONING CONCEPT

The existing zoning in the Fort Point Channel area provides for industrial and commercial uses which in some instances are incompatible with development a healthy community area.

The interim planning goals for this area focus on promoting a new town-in-town concept that would include mixture of uses -- commercial, manufacturing, residential, retail, open space and cultural/entertainment -- and a range of densities. Some areas would be rezoned to permit residential uses and neighborhood services only, others would be zoned for open space

uses, and still other would be mixed-use zones, for example, commercial with first floor retail or other types of pedestrian-oriented uses. A range of densities would be provided for in order to ensure an appropriate transition between the Fort Point Channel community and existing residential communities and between Fort Point Channel and the Harbor.

Developers would be required to provide land for open space purposes and other public benefits under a new zoning scheme. This technique, known as sub-division exactions will borrow from experiences of rapidly growing suburban communities.

The Planned Development Area (PDA) zoning technique will be available for use in this area; a one acre parcel assemblage requirement must be met before a project can be developed as a PDA. To be approved as a PDA a project will have to provide well designed open space, comply with microclimate standards, provide adequate parking and supporting services such as child care facilities or retail space, and other public benefits.

Land-Use: Housing

In housing three types of residential use are identified. The first consists of 2,000 units with a density of 50 units/acre, and a FAR1. The second consists of 3,500 units, 100 units/acre and a FAR 2.5. The third, in mixed use, consists of existing buildings, the Boston Wharf and CC&F areas, the high tech areas, the commercial areas and other smaller subareas of mixed use, totaling 2,500 units. The proportion of residential to commercial space will be 1:3 in the areas of Boston Wharf and CC&F, and 1:4 in the high tech subareas.

The commercial space is identified as:

- continued use of existing buildings;
- mixed commercial/residential with a ratio of 1:3 in the subareas of Boston Wharf and CC&F;
- mixed commercial/residential use with a ratio 1:4 in the subareas of high tech and office space;
- the SPINE ("New Commercial Avenue") areas of only commercial use, as a continuous fabric of the existing buildings and Congress and Summer Streets.

A total of 7,500,000 square feet of new commercial space--retail, office, light and high technology industries is proposed for the Fort Point Channel area.

The demand for housing in Boston is strong and will continue to increase through the ten year period 1985-95. Rising birth rates, increasing in-migration and growth of new, smaller households will require increased housing production. The Fort Point Channel area, with its large vacant parcels and underutilized buildings offers reuse potential, is an excellent

area to target for meeting the City's housing production goals.

Close to the downtown financial core, the Fort Point Channel area is perfectly situated to meet the demand for residential development close to the downtown. The City has an opportunity to create a new neighborhood, adding housing units without displacement. There is potential for 6,000 to 8,000 units of housing to be built within a mixed of commercial, industrial and open space uses. These units could offer a range of housing types and rental and homeownership opportunities.

High density, mid and hi-rise development will be needed to house the new households or individuals drawn to the Fort Point Channel area because of its access to downtown amenities and jobs. Lower density development, similar to the adjacent South Boston neighborhoods, could meet the need for family housing that until how could only be accommodated in neighborhoods outside the central core. Artist's housing, already a feature of Fort Point Channel, brings richness and cultural diversity to this area, and continued production of it should be encouraged.

Homeownership, particularly in the affordable range, will promote stability. A mix of options, including luxury rental units, will serve a diverse population, mirroring parts of the affluent North End Waterfront on one side and the more modest South Boston neighborhood on the other. This mix, including artist's housing, will produce a unique neighborhood serving all of Boston's residents.

Land-Use: Commercial Development Perspective

Fort Point Channel today makes up 3 percent of Boston's jobs; a century ago it was the mainstay of Boston's industrial sector and the City's economy, with jobs in shipping, warehousing, and the processing of imported wool, sugar, leather and other industrial raw materials. Today, Fort Point's 15,000 jobs include 2,000 in Gillette Park, 2,000 in printing and publishing, 800 in food processing, 900 in apparel, 300 in leather products, 700 in communications, 3,000 in wholesale and retail trade (including 900 in eating and drinking places), 1,000 in finance, and 1,200 in services.

The Fort Point Channel area could change radically, however, as a consequence of the extraordinary revival of Boston's economy and its future prospects. There are also the factors of proximity to the Financial District, hundreds of acres of vacant and underutilized land (the largest land bank in the City), and the beginning of the first of a series of transportation linkages (Northern Avenue Bridge, Third Harbor Tunnel and the Seaport Access Road). With this infrastructure, the commercial development of Fort Point Channel will become increasingly feasible.

Fort Point Channel's ascending role in commercial development could emerge significantly but modestly in the next five years (in contrast to a more rapid emergence of population and housing), but then expand dramatically in the last decade of the century. With a projected

growth of 5,500 jobs in the 1985-90 period (including 600,000 square feet of office space and 2,500 office jobs), Fort Point could make up 14 percent of Downtown's projected job growth in this period. This prognosis is based almost wholly on development projects underway, approved and scheduled for completion. In the ten years following 1990, in contrast, Fort Point Channel may gain 30,000 jobs, more than 40 percent of the projected employment growth for Downtown, including 6 million square feet of office space and 6,000 industrial, trade, transportation and communications jobs. With a projected employment of 50,000 workers in the year 2000, Fort Point Channel would account for 12.5 percent of Downtown's jobs, and 7 percent of those for the City as a whole, and reemerge as one of the principal economic centers in Boston. Fort Point Channel would be tied to the City's financial district, and its manufacturing would be high-tech oriented.

Variations on Alternative B

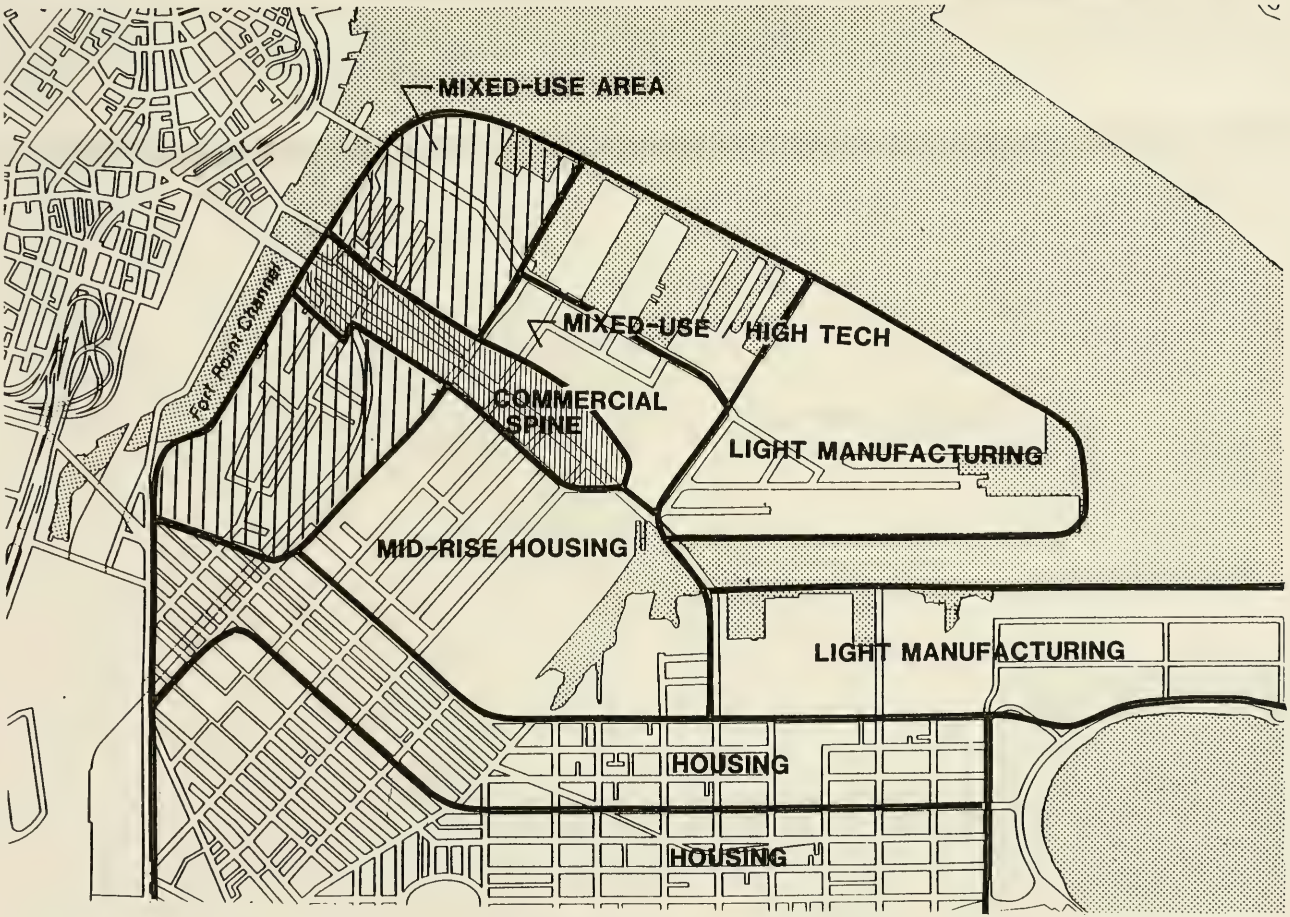
In considering the physical design implications of the 'new-town-in-town' concept several variations dealing with district character, boundary, and disposition of land use might be pursued. The following variations investigate specific design attributes related to the 'new-town-in-town' alternative.

B1: An Expanded Summer Street Corridor

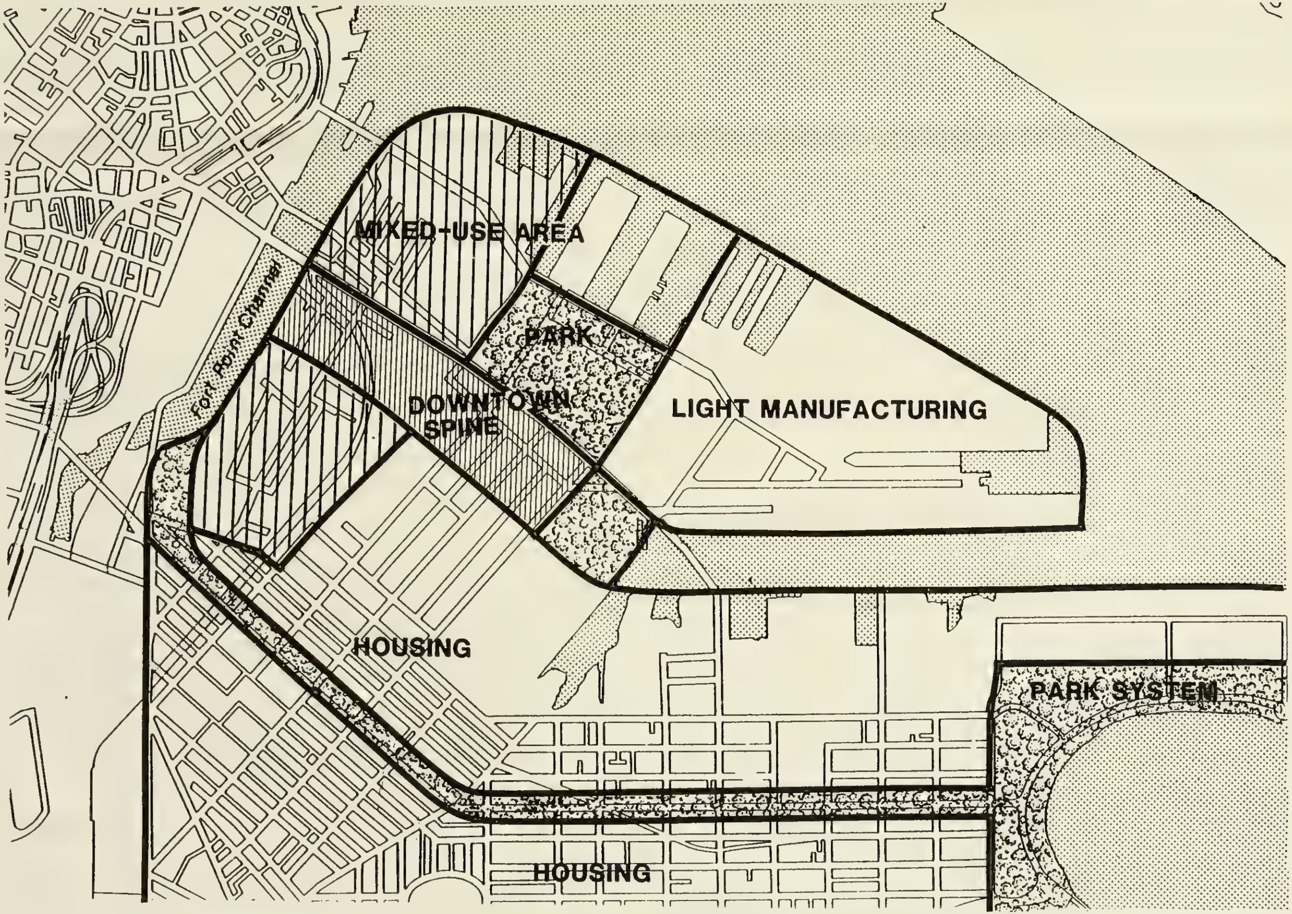
The plans on the opposite page explores the use of Summer Street as the principal spine through the study area. It challenges the notion that the highest density of development ought to occur along the water's edge, as is being pursued at Fan Pier. Traditionally in Boston, major development has occurred along the corridors of the major radial roads stretching out from the core. Summer Street is one of these 'spokes-of-the-hub'. It currently contains the densest level of development in Boston Wharf district. An expanded Summer Street mixed-use corridor, perhaps several blocks wide could become the center of and organize the new town in town concept.

Advantages

- Provide a legible center and commercial corridor for Fort Point Channel development, by expanding upon an existing important street in the area.
- Reduce pressure on high-density development at the water's edge. Allow the water's edge to accommodate more special uses, recreational, public amenities.
- Support an urban silhouette which steps up in height away from the harbor, rather the place the tallest buildings at the water's edge.
- Establish the 'logic' of a commercial spine acting as the boundary between, and the gathering point of the more unique uses along the harbor and a new residential district. The scheme would allow for an extension of the fabric of residential South Boston towards the Summer Street corridor.



ALTERNATIVE B: NEW TOWN IN TOWN



ALTERNATIVE B.1

B2:

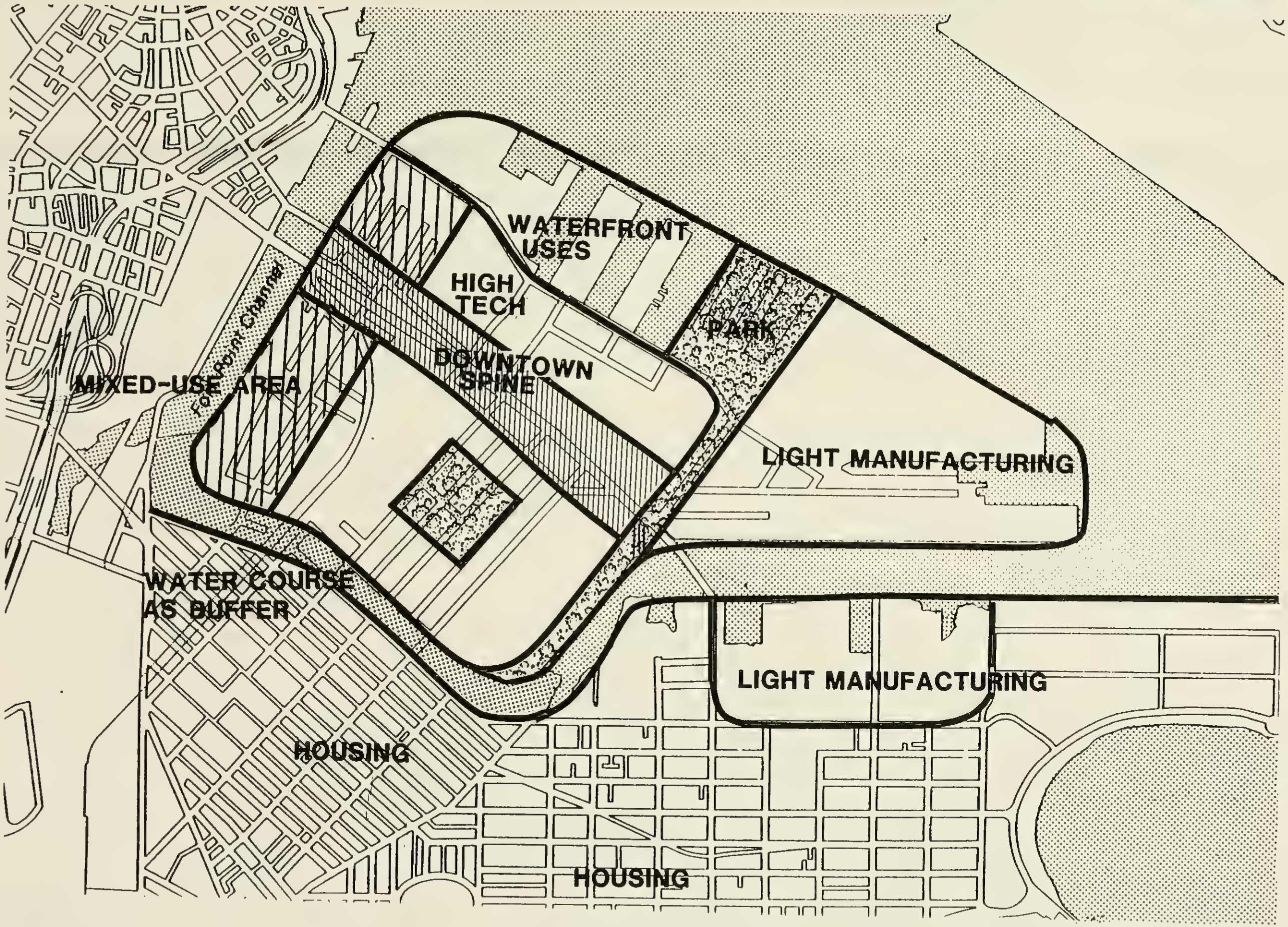
As the majority of the study area is on land reclaimed from water, there is a special opportunity to capitalize on water resources. Currently both the Fort Point Channel and the Reserved Channels end inauspiciously in mud flats, and underutilized (or not usable) land. Alternative B11 proposes that a new canal be created to connect the ends of the two channels.

Advantages:

- Create a regional scale water amenity, potentially useful for both recreational and transportation purposes.
- Reintroduce water as an important feature and asset of the study area and of the region.
- Eliminate the unsightly, undevelopable and unsanitary dead ends of the two channels.
- Create a natural boundary between South Boston and the Fort Point Channel area.
- Facilitate the notion of an 'industrial Boston' and bridges trail by using the canal; as a tour path passing a range of old and new bridges.

Disadvantages:

- Potential isolation of the Fort Point Channel area as an island.
- Cost of cutting the channel and of building additional bridges to span across it.

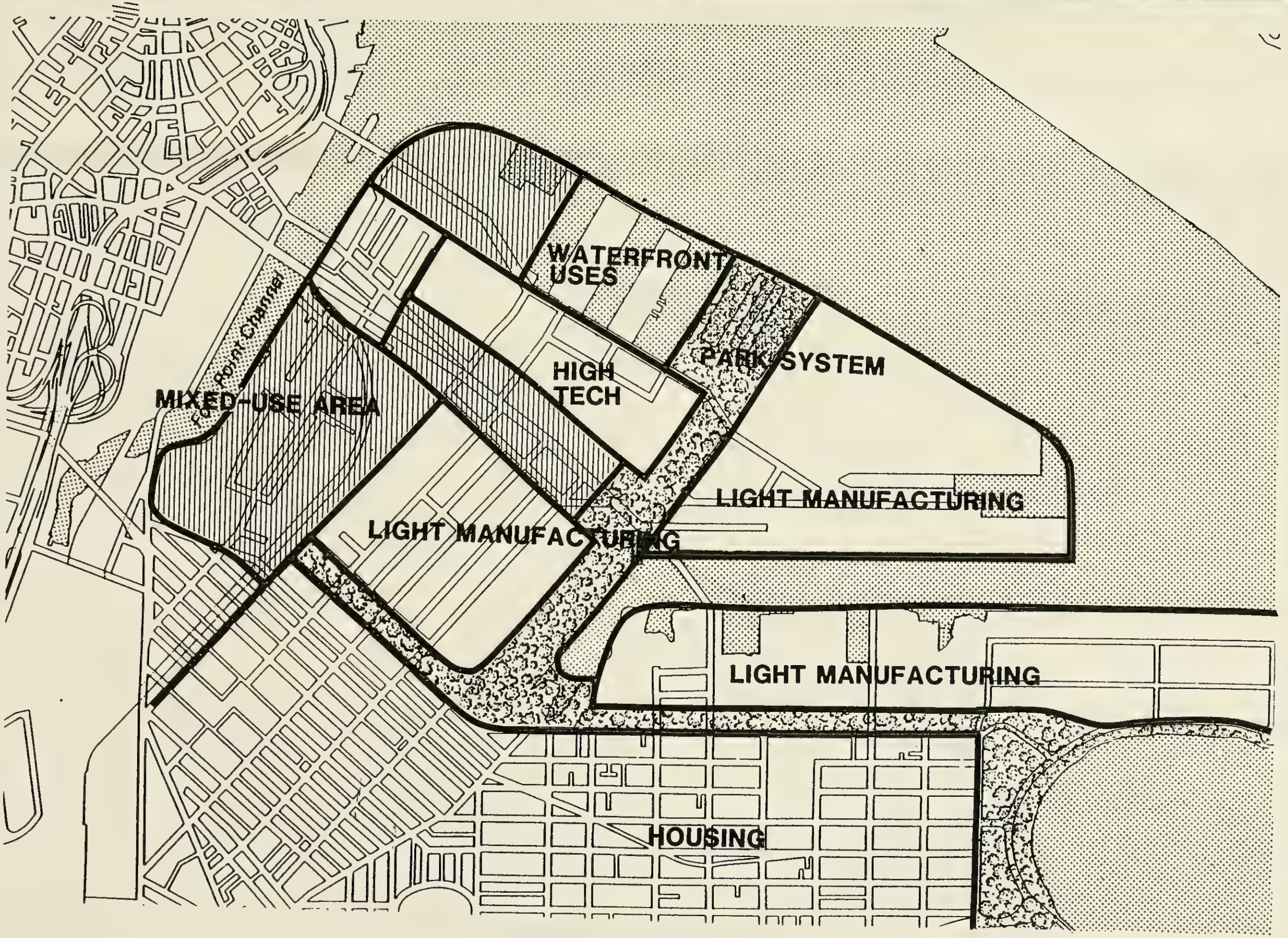


ALTERNATIVE B.2

B3:

An important variable is establishing the physical character of the new-town-in-town concept would be its fabric of streets, blocks and open spaces. Several sections of Boston and of many cities are identified by their district pattern of streets and squares. Boston's Boston Bay is characterized by its rectangular blocks made by its four broad east-west streets and its eight slightly narrower north-south streets, the whole grid centered by the majesty of Commonwealth Mall. Georgian Edinborough and Bath are characterized by their system of residential squares. Baroque Paris is identified by its system of rondels and radiating boulevards.

The pattern and hierarchy of streets that would give the Fort Point Channel/South Boston new-town-in-town its own physical legibility and uniqueness, must be considered along with the patterns of land use and the programming of activities.



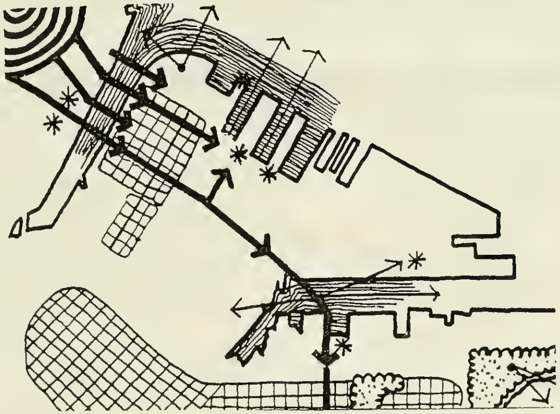
ALTERNATIVE B.3

2.0 DISTRICT CHARACTER

2.1 EXISTING CONDITIONS

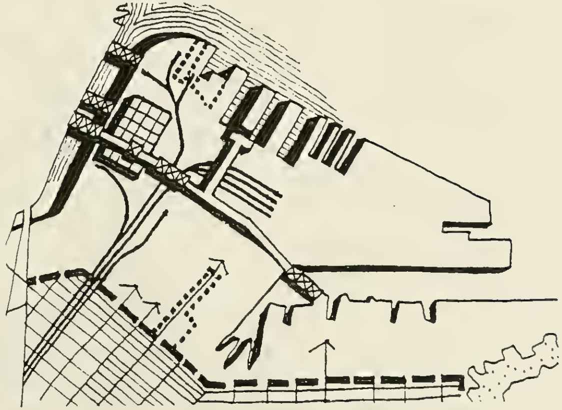
General Characteristics

At first glance the Study Area would appear as being only a vast and underutilized piece of land with no special interest. However, the South Boston Harborfront includes some unique features that should not only be preserved but also taken into account when defining the guidelines that will shape the development of this area.

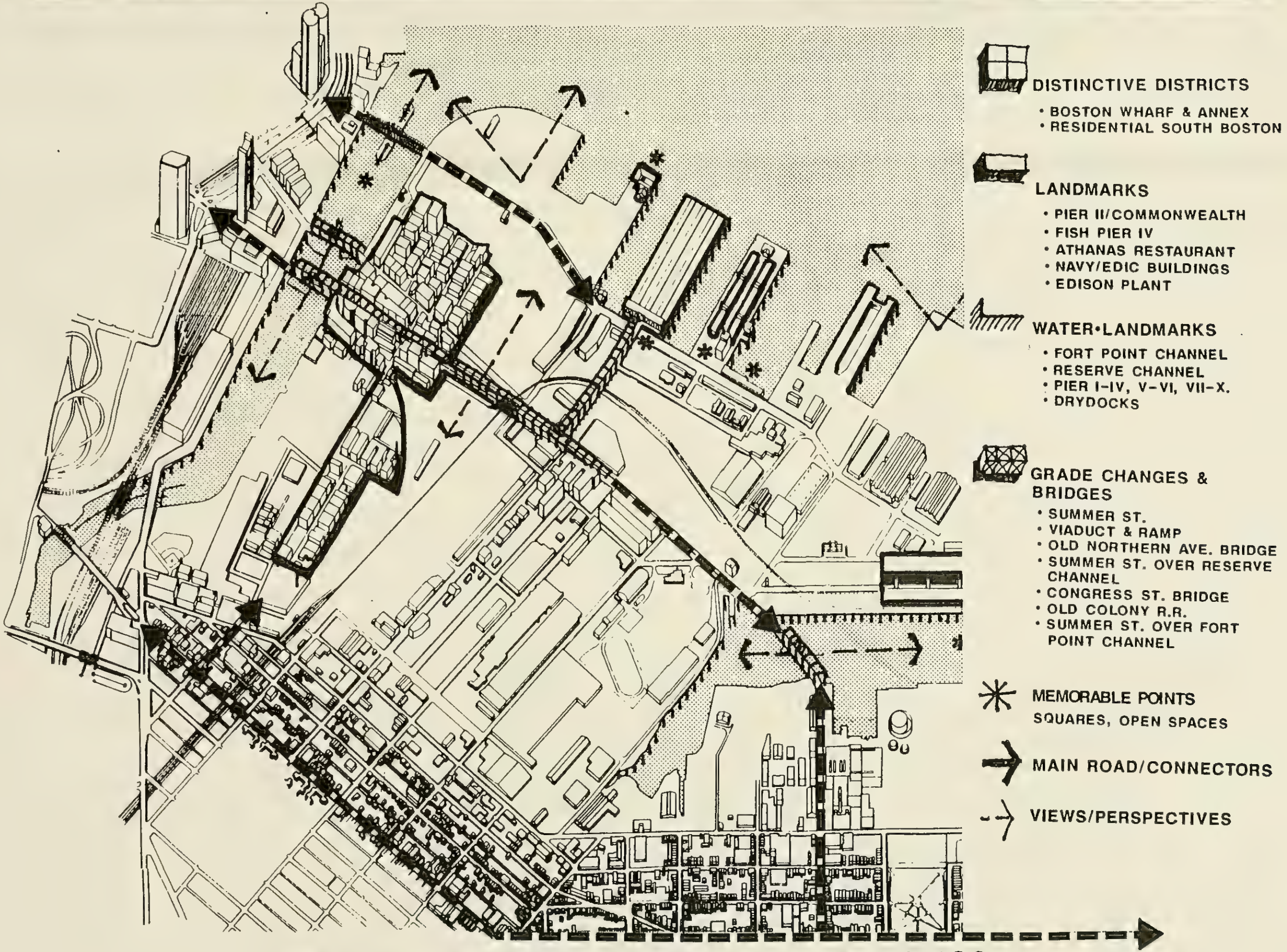


The already described two-level system is a unique feature that can provide opportunities for solving some of the traffic problems as well as providing with a unique multi-level experience rich in views over the harbor, perspectives to the Pier V and a new dimension in the perception of buildings and street intersections at two different levels.

The Study Area comprises a remarkable amount of movable span bridges of great quality over the Fort Point and Reserve Channels. The water frontage goes beyond the channels to the Boston Harbor where the South Boston Harborfront is rich in piers. Some of them hold landmarks such as Pier IV restaurant, Commonwealth Pier V Headhouse, and Boston Fish Market in the Fish Pier. Along the Reserve Channel the Navy Yard buildings and the Edison Company smoke stacks dominate the landscape.



Perhaps the strongest image of the area is provided by the Boston Wharf Historic District with its cohesive fabric of brick warehouse buildings.



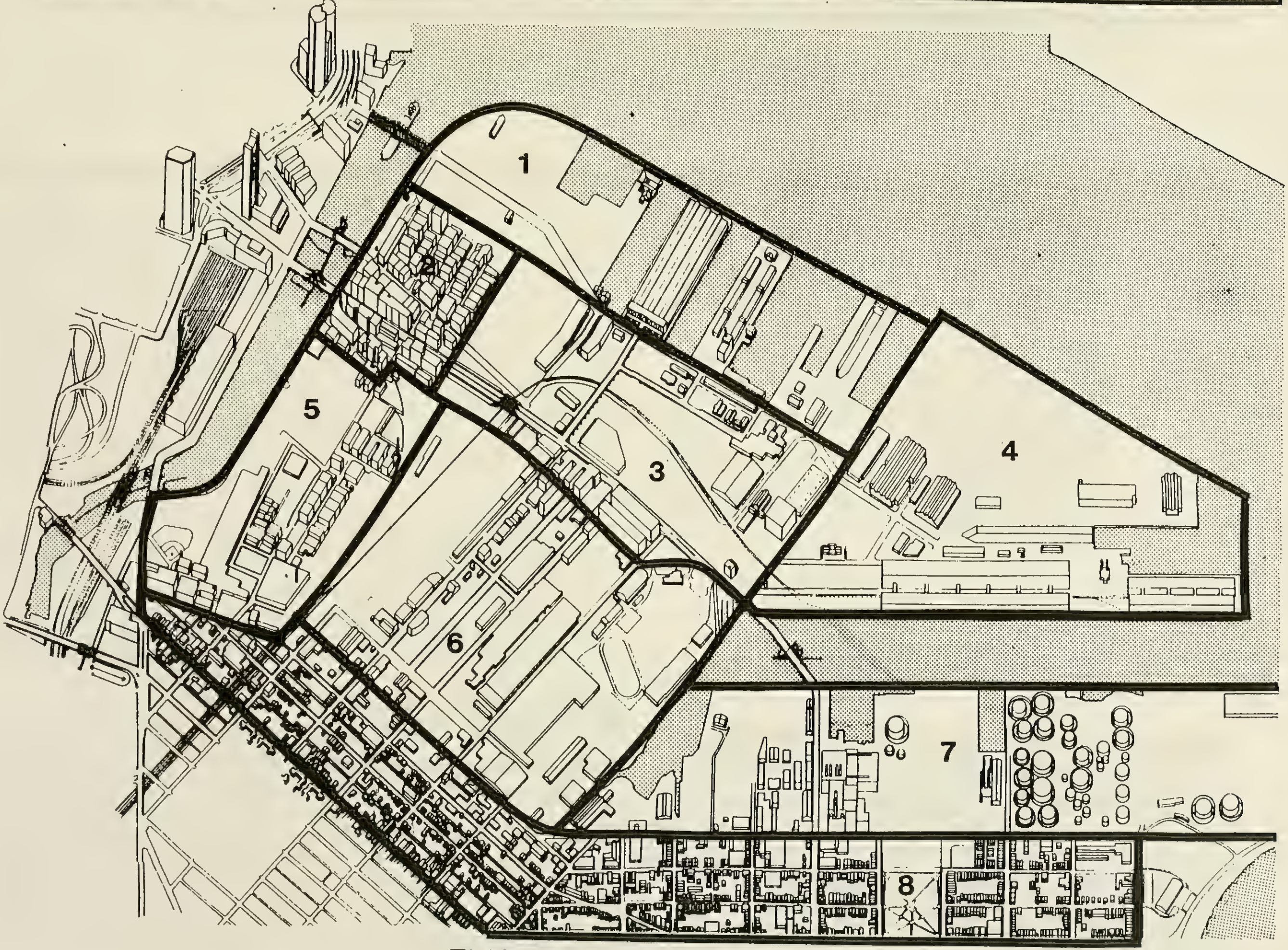
IMAGEABILITY: DISTINCTIVE CHARACTERISTICS

Distinctive Sub-Districts

We can recognize seven main districts in the South Boston Harborfront and a transition zone between the study area and the residential South Boston. This transition area is included in the study given its relevance as buffer for protecting the residential uses from the light manufacturing uses.

The Sub-Districts are:

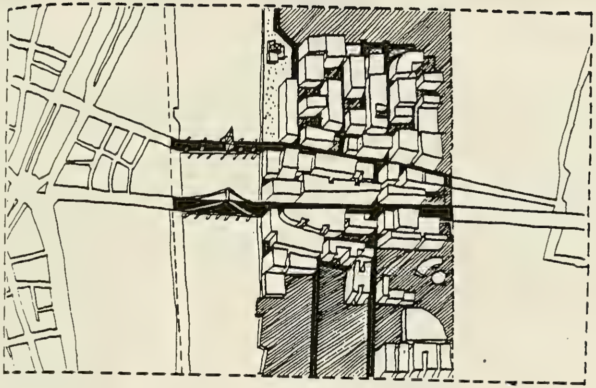
- Boston Wharf Historic District
- Piers and Harborfront
- Commonwealth Flats/CC&F
- EDIC/Boston Marine Industrial Park
- Gillette/Boston Wharf Annex
- South Boston Industrial Park
- Edison/Containerport
- South Boston Transition Area



EXISTING SUB-DISTRICTS

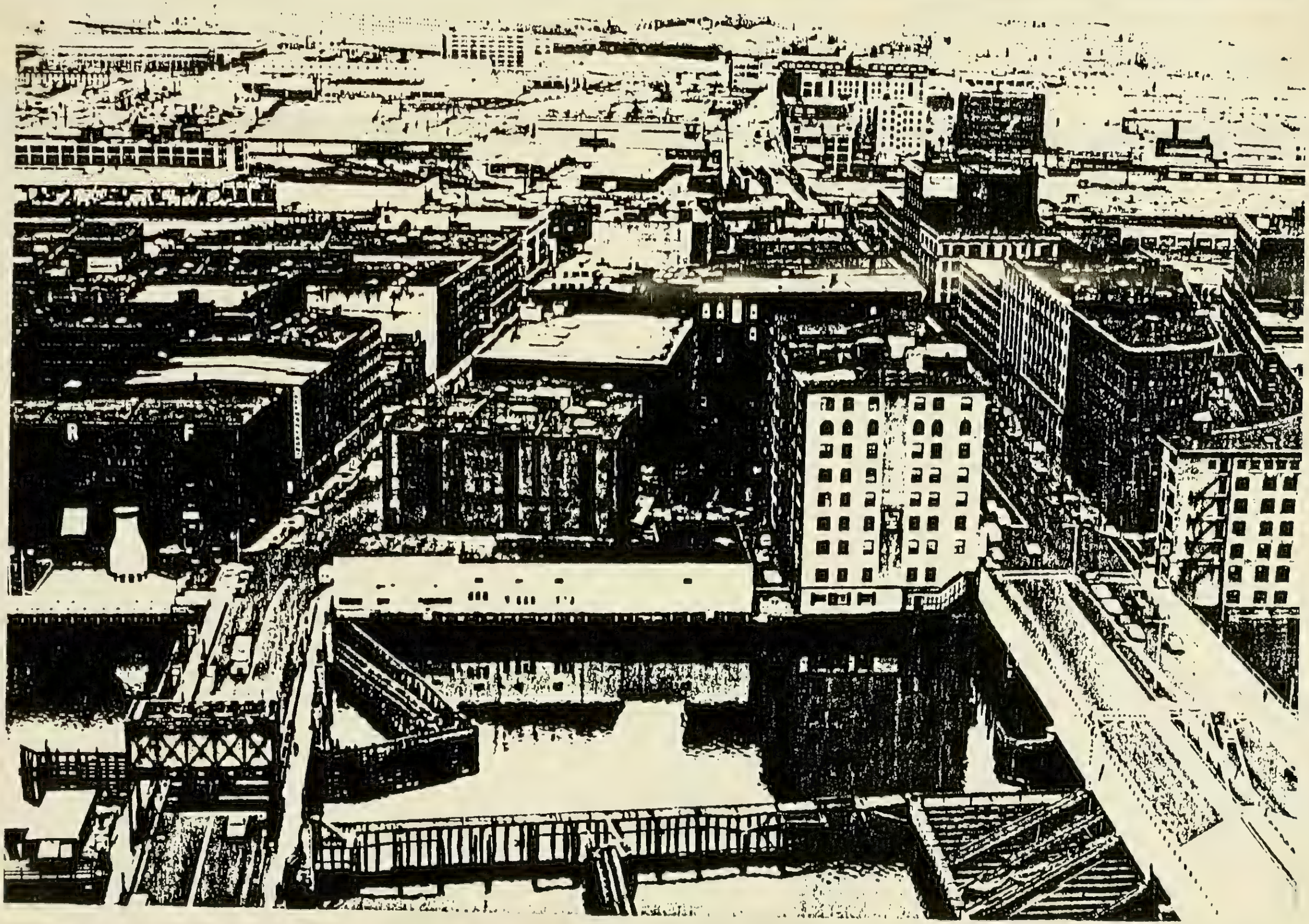
Boston Wharf Historic District

In 1836, Boston Wharf Company began its series of landfilling between Dorchester and New Northern Avenue. By 1870, the Eastern Bank of the channel was established. By 1882, the Boston Wharf had finished reclaiming much of the east banks of the channel and by 1895, the Boston Wharf Company had 2.5 million feet of land available for sale or lease to perspective business concerns. Between 1890 and 1930, the district of brick industrial warehouses emerged. The A Street buildings were constructed in the 1890's to 1930's as an extension of the Boston Wharf Company.



In the early 20th century, the area became the distribution center for wool, ice, sugar and molasses as well as lumber, coal, bananas, and leather. Currently, the warehouses continue to store goods as well as provide space for printers, welders, office workers, light manufacturers, artists and residents.

SUMMER STREET ELEVATION



DISTINCTIVE SUB-DISTRICT

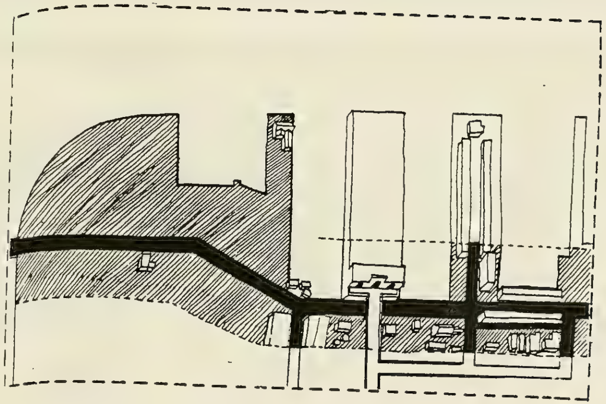
Commonwealth Pier

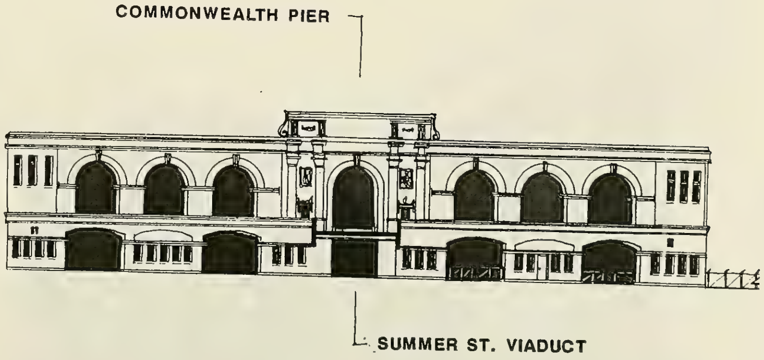
Commonwealth Pier is a neo-classical monument to the aspirations of the Port of Boston and to a vast complex of wharves, freight terminals, and new industries which generations of Boston businessmen hoped to see built on the Commonwealth's unclaimed mudflats in South and East Boston. It was, its directors boasted during construction, "the largest and best equipped pier in the country," designed to signal the re-emergence of Boston as an important 20th century industrial and commercial port.

Pier Five itself had been constructed by the Board of Harbor & Land Commissioners in 1900, although no superstructure had been constructed, and for over a decade the pier remained unused.

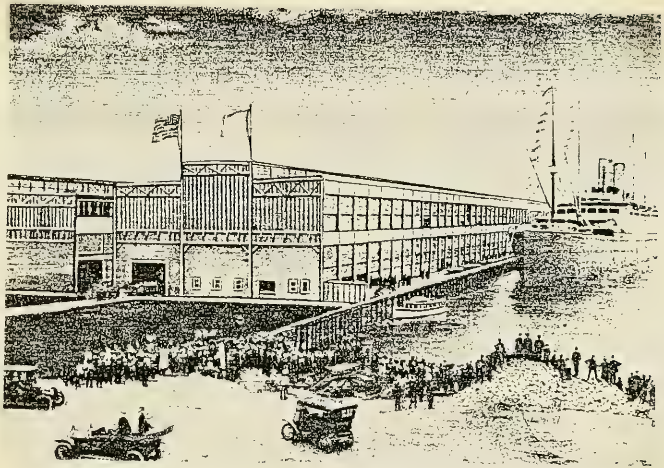
In October 1912, plans and estimates were outlined for a buildings and grain elevator estimated to cost $1.2 million. However, to attract steamship lines, particularly the Hamburg-American Line, the plans were changed, the pier enlarged, and the headhouse redesigned as an appropriate monument to advertise Boston. In 1913, the Directors announced that fourteen steamship lines had begun, or were about to begin, service in Boston.

Architect for the redesign was the Bostonian Henry F. Keyes (1879-1923), also credited with the design of the adjacent Fish Pier. The new structures designed by Keyes and engineer Frank Hodgdon covered the entire pier, and consisted of a four-story headhouse, and, perpendicular to it, three parallel sheds extending to the end of the pier.

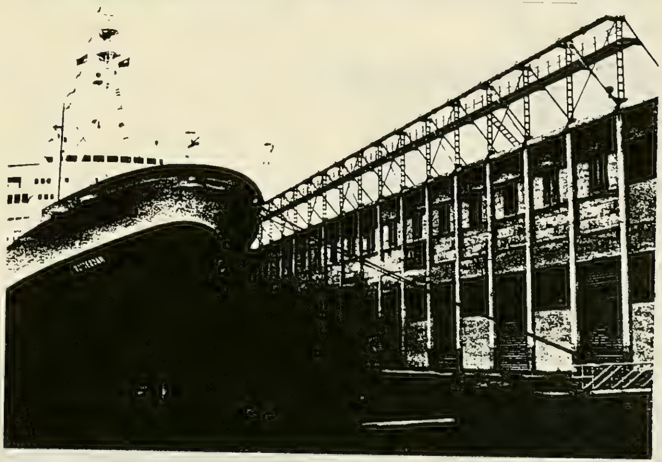




Reflecting the separate freight and passenger access to the pier, the reinforced concrete and steel-frame headhouse consists of a two-story base for rail and other freight traffic, while above it, at the level of the third story, a ramp from the Summer Street Viaduct provides vehicular access to the passenger section of the building. The monumental two-story upper-level facade consists of an arcade nine bays across, arranged symetrically around a triumphal arch motif and faced with cast-stone ashlar. Dolphins, ships, urns, eagles, and full classical entablature make the facade one of the best examples of public Beau-Arts architecture in Boston.



Although it failed to meet the expectations of its promoters, the pier did serve as an important freight and passenger terminal for another forty years. The pier handled large shipments of imported wool for the wool merchants, whose warehouses lined nearby Summer and Congress Streets. When passenger service was resumed, the pier served as a Port of Entry for immigrants to the United States. Today the pier continues to act as a docking facility for passenger cruise ships, although the use of containerized cargo has made the freight facilities obsolete. Owned and operated since 1959 by the Massachusetts Port Authority (MASSPORT), the pier was renovated and converted to office and exhibition space known as the "World Trade Center".

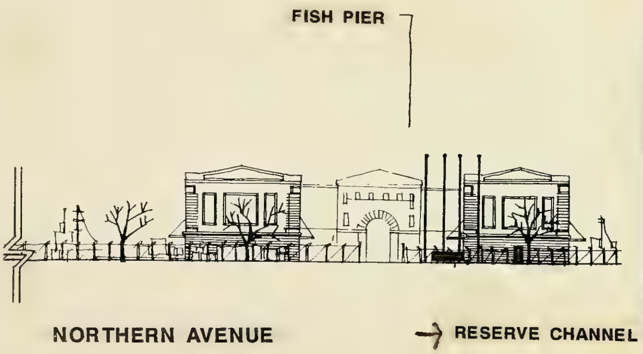


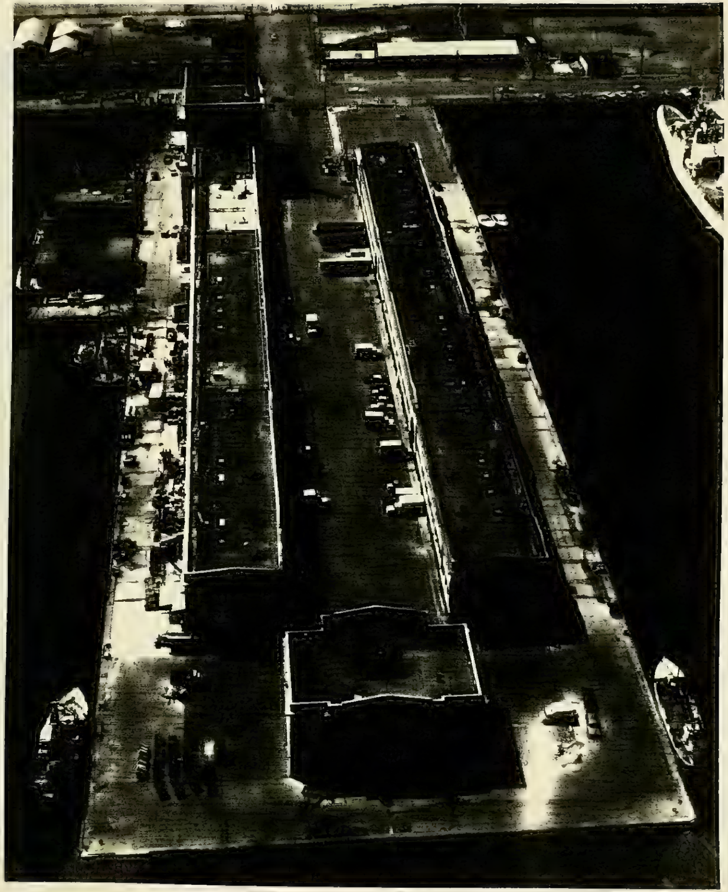
- Peter Stott, Massachusetts Historical Commission

Fish Pier

The Boston Fish Pier is the center of all fishing transactions for the Boston Metropolitan area. Fish are sold in the New England Fish Exchange on the pier and filleted or frozen by processors located on the pier or on Northern Avenue.

The three-story twin fish piers of brick and terra cotta were constructed in 1912 by the Commonwealth of Massachusetts. It was operated privately by the Boston Fish Market Corporation until 1912 when Massport took over its operation. It has been completely renovated by Massport; the structure upgraded and the original power plant replaced by underground utilities. The first and second floors serve the fish dealers and processors while the third floor is available for compatible rent producing uses. The 250,000 s.f. fish processing capacity was increased and today 23.5 mil. pounds of fish land here.

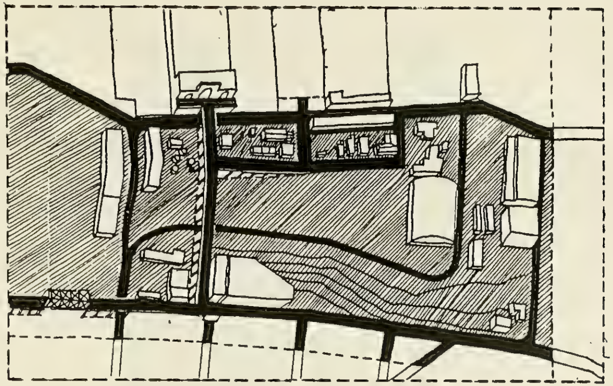




OLD FISH PIER

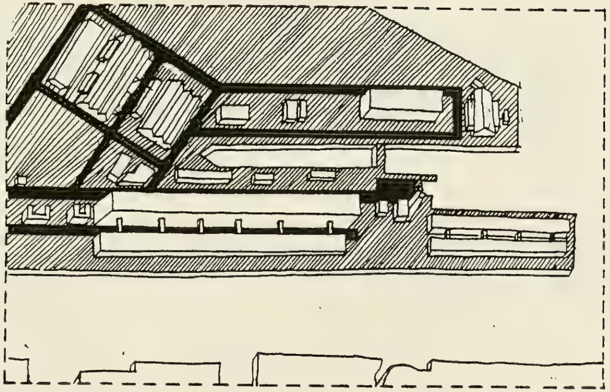
Commonwealth Flats - McCourt/Cabot
Cabot & Forbes

The area between Northern Avenue and Summer Street is mostly vacant, abandoned rail yards with only a few existing buildings. Of these buildings, the majority are two stories or less and accommodate maritime and warehousing uses. As this area was dedicated to rail activity, few streets exist and the main roadway is Viaduct Street which is grade separated connecting Summer Street to the upper level of Commonwealth Pier. Viaduct Street does frame a grade perspective of the Beaux Arts facade of the pier headhouse and provides remarkable views of downtown Boston.



EDIC/Boston Marine Industrial Park

This light industrial area comprises the Old Army Base with one of the largest dry-docks in New England (over 1,100 feet long), and the very long Army buildings (1,600 feet). One of these buildings was recently renovated to house the Boston Design Center with a new post-modern facade and square.

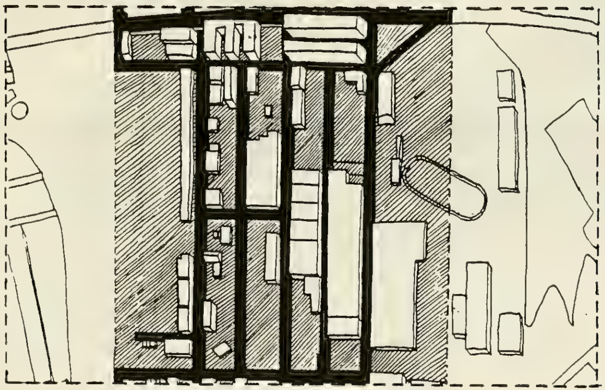


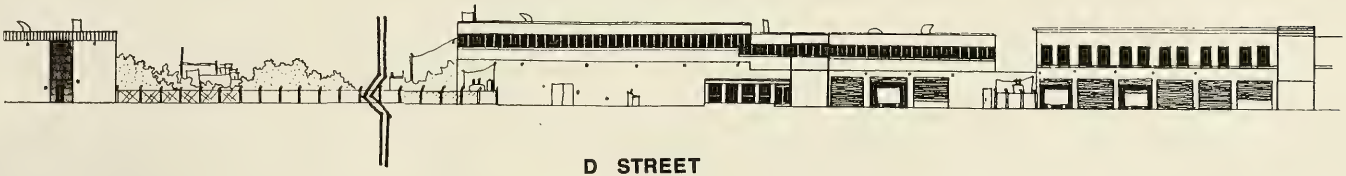
Gillette/Boston Wharf Annex

The area along the east bank of the Fort Point Channel south of Summer Street is mostly vacant, but it includes some of the same building types that we find in the Historic Boston Wharf District plus the World Headquarters of the Gillette Company along A Street.

South Boston Industrial Park

Over 150 acres of underutilized land lays between Summer Street and First Street. It has predominantly large one-story structures that serve warehousing purposes. Along Summer Street, we find 9-story buildings with brick facades that emulate the Wharf District. The existing street pattern precludes any east-west traffic.





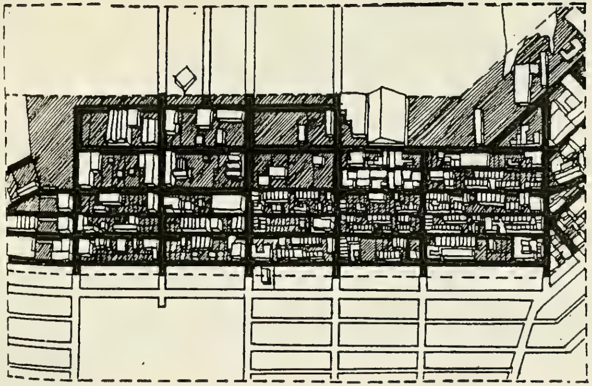
D STREET

Edison/Container Port

This heavy industrial and maritime area along the south bank of the Reserve Channel has only a few buildings. The Old Boston Edison plant stands out in the South Boston skyline with its remarkable brick facade and tall smoke stacks.

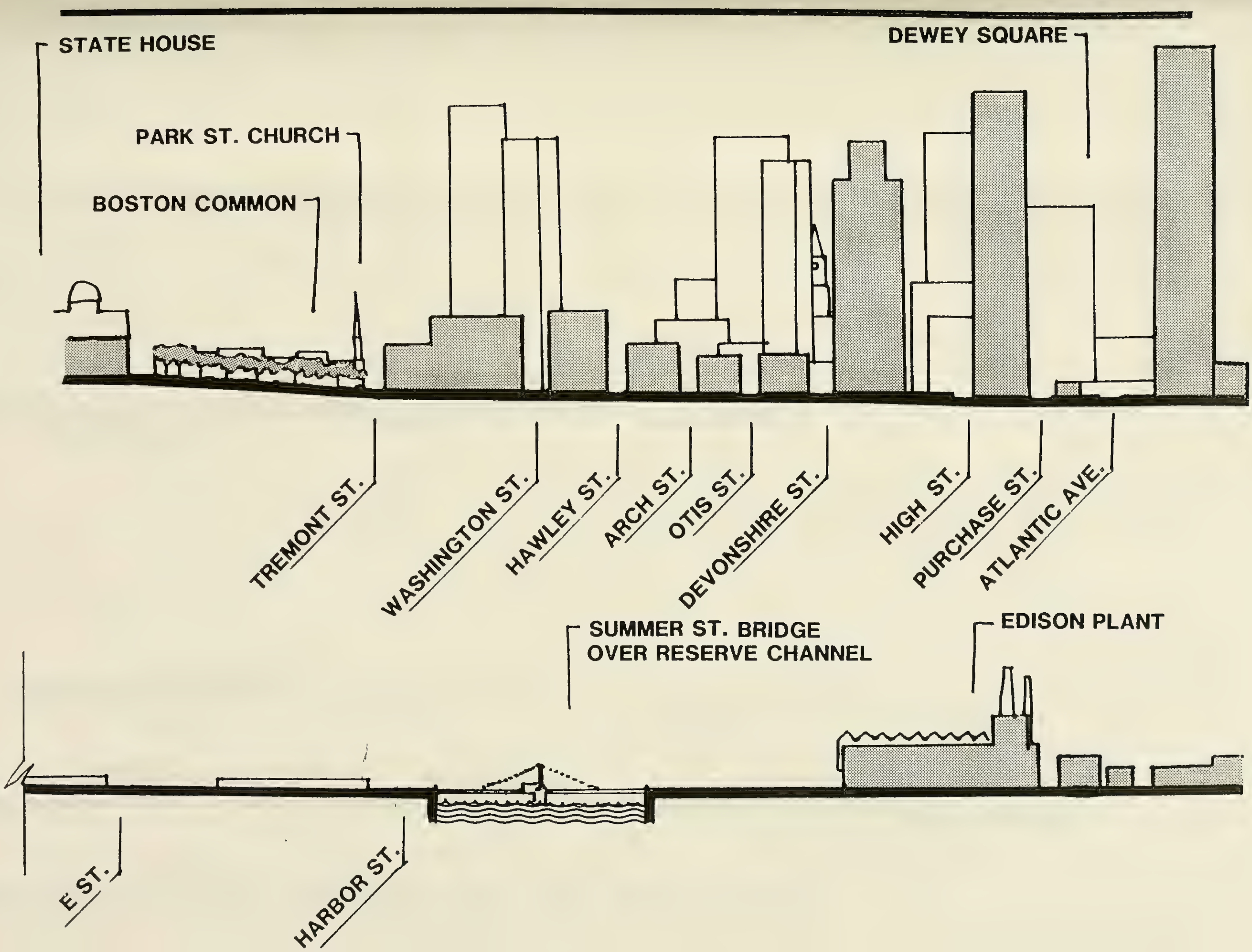
South Boston Residential/Transitional Area

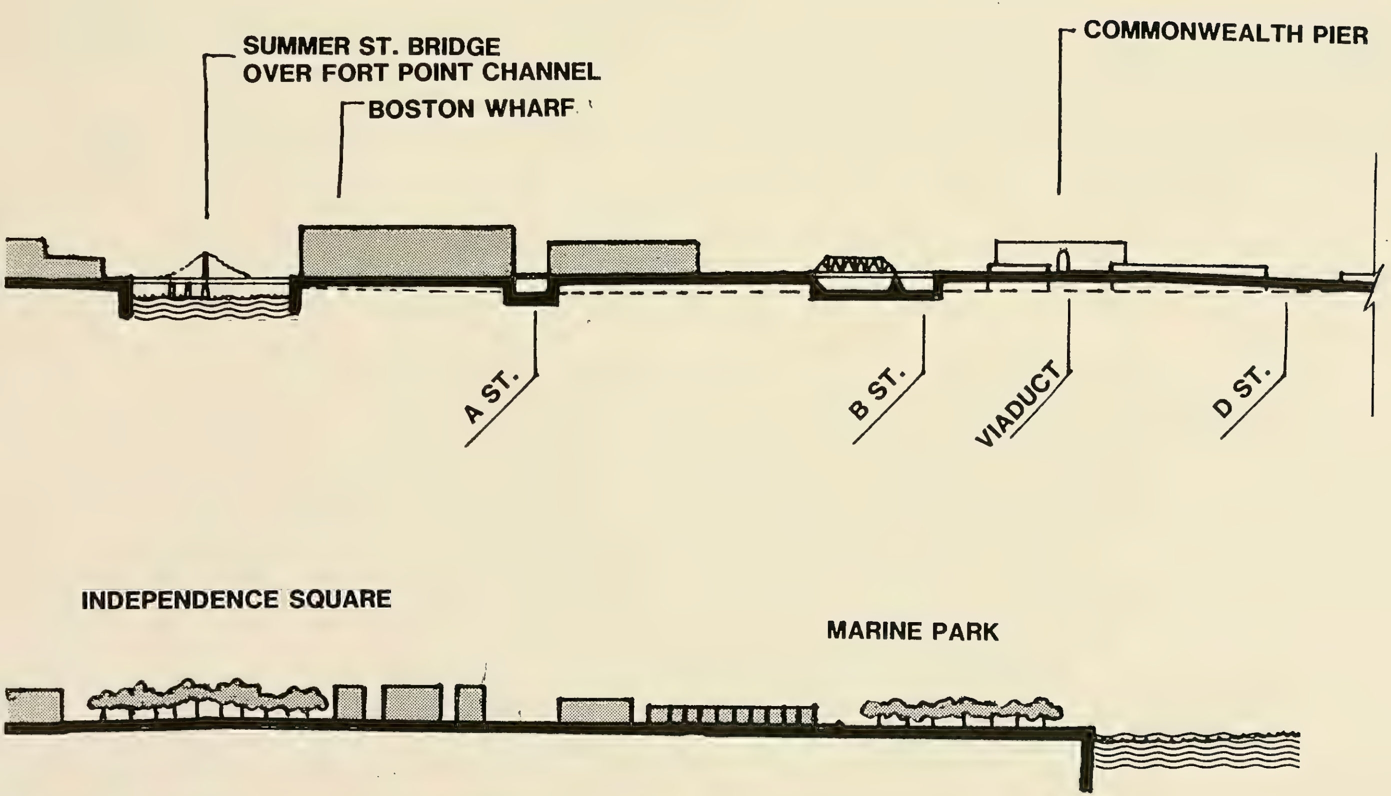
This fringe area that stretches between First Street and Broadway includes two and three-story family wood houses along Third Street and one-story brick and concrete light manufacturing buildings along First street. The area in between is mainly vacant and presents heavy truck traffic. The area east towards Independence Park has larger lot sizes (no mid-block alley) and the buildings are in better condition than in the very deteriorated Saint Vincent neighborhood to the west.



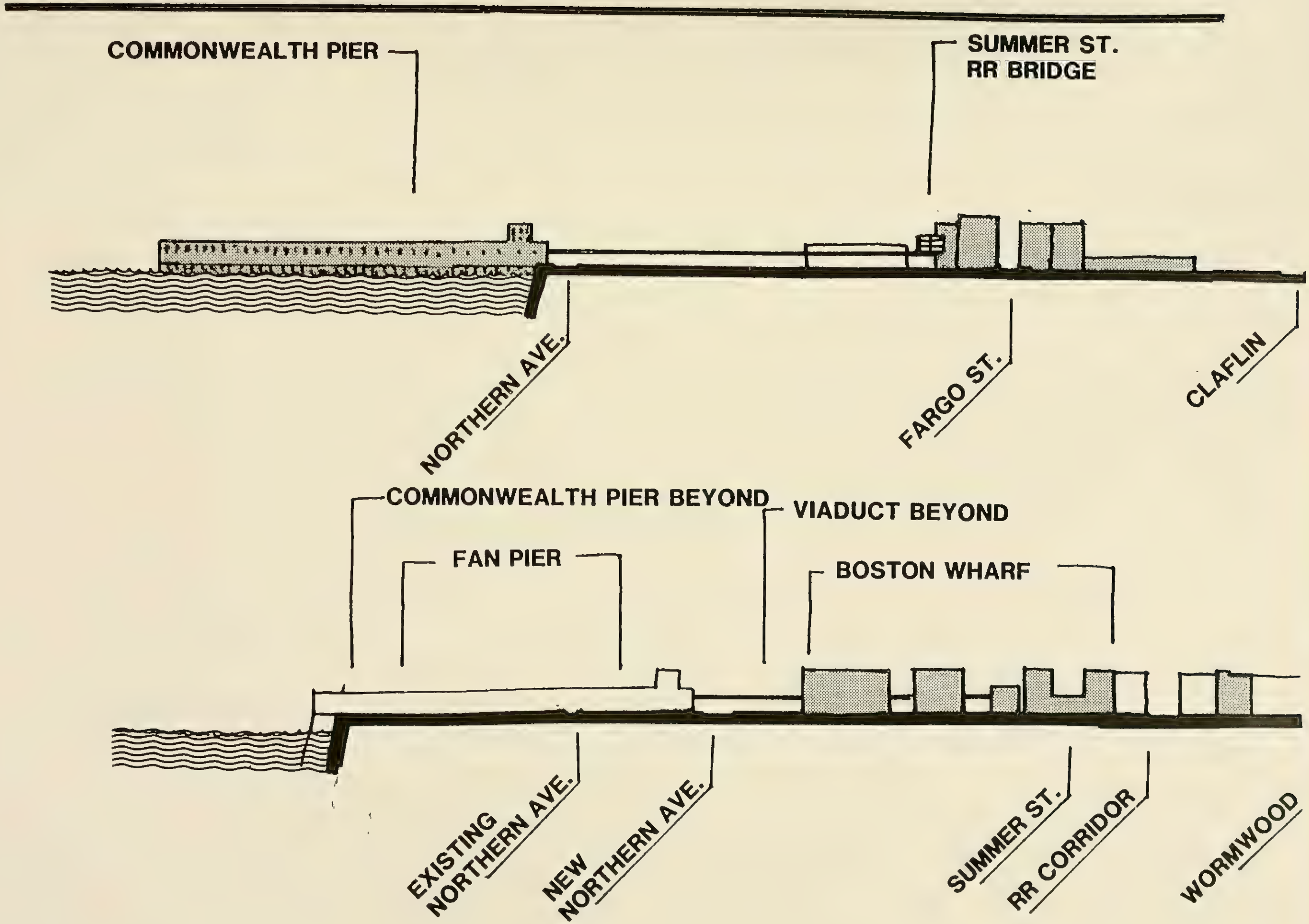
TRANSITION AREA

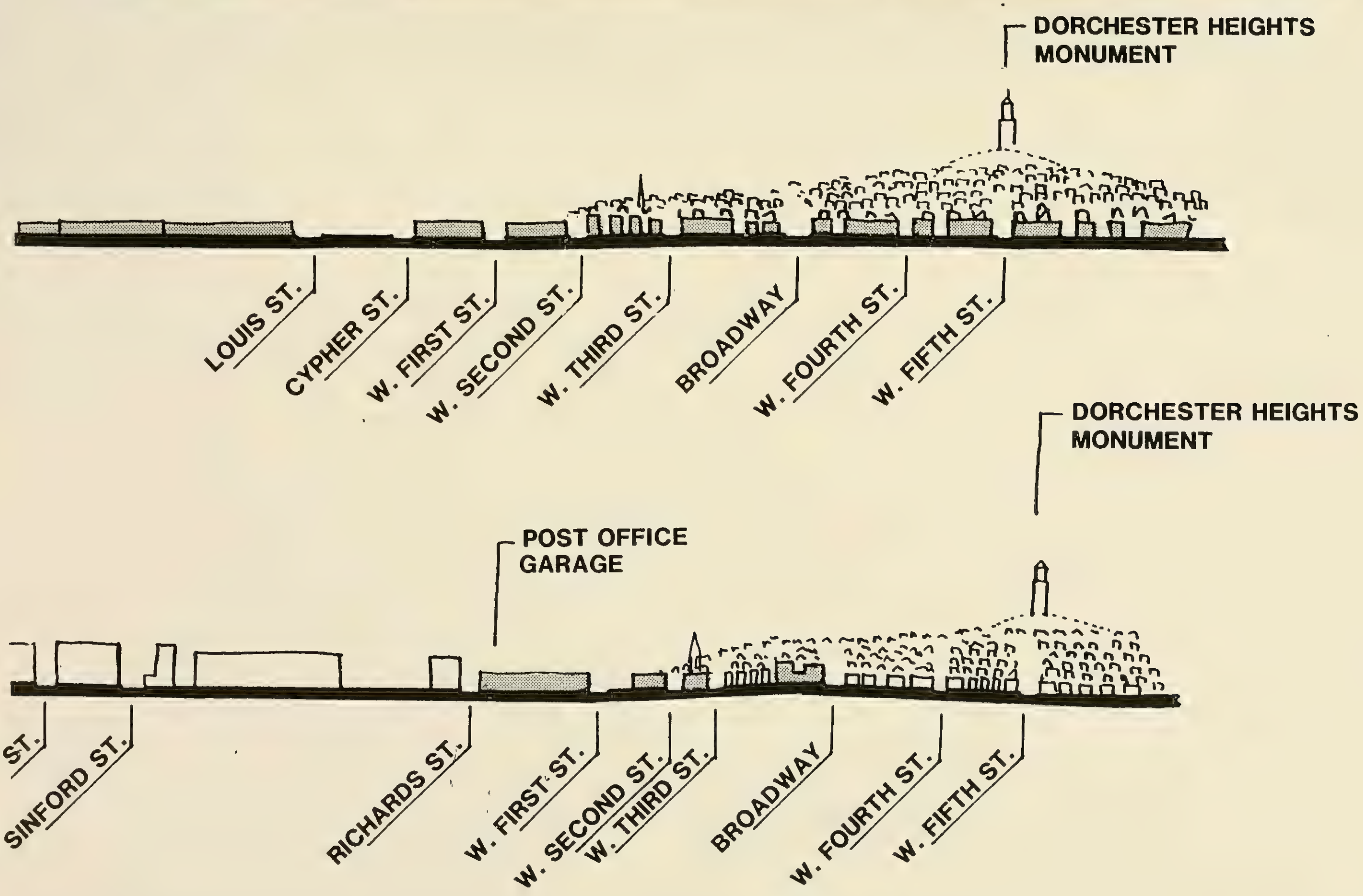
RESIDENTIAL TRANSITIONAL AREA / BOSTON EDISON PLANT


STATE HOUSE
PARK ST. CHURCH
BOSTON COMMON
DEWEY SQUARE
TREMONT ST.
WASHINGTON ST.
HAWLEY ST.
ARCH ST.
OTIS ST.
DEVONSHIRE ST.
HIGH ST.
PURCHASE ST.
ATLANTIC AVE.
SUMMER ST. BRIDGE
OVER RESERVE CHANNEL
EDISON PLANT
E ST.
HARBOR ST.



EAST-WEST CROSS SECTION OF THE STUDY AREA


COMMONWEALTH PIER
SUMMER ST.
RR BRIDGE
NORTHERN AVE.
FARGO ST.
CLAFLIN
COMMONWEALTH PIER BEYOND
VIADUCT BEYOND
FAN PIER
BOSTON WHARF
EXISTING
NORTHERN AVE.
NEW
NORTHERN AVE.
SUMMER ST.
RR CORRIDOR
WORMWOOD



SOUTH–NORTH CROSS SECTION ALONG A & B SREET

2.2 PROPOSED SUB-DISTRICT GUIDELINES

Objectives

Guidelines which identify and coordinate these opportunities fall within five major objectives:

1. Through major new construction, create a new district which is urban in character and scale and emphasizes a quality pedestrian environment - an area of city streets and blocks with urban squares and parks.

2. Ensure public access and activity along the water's edge. Use bridges, grade changes, and views of landmarks and the harbor as special elements of the new district.

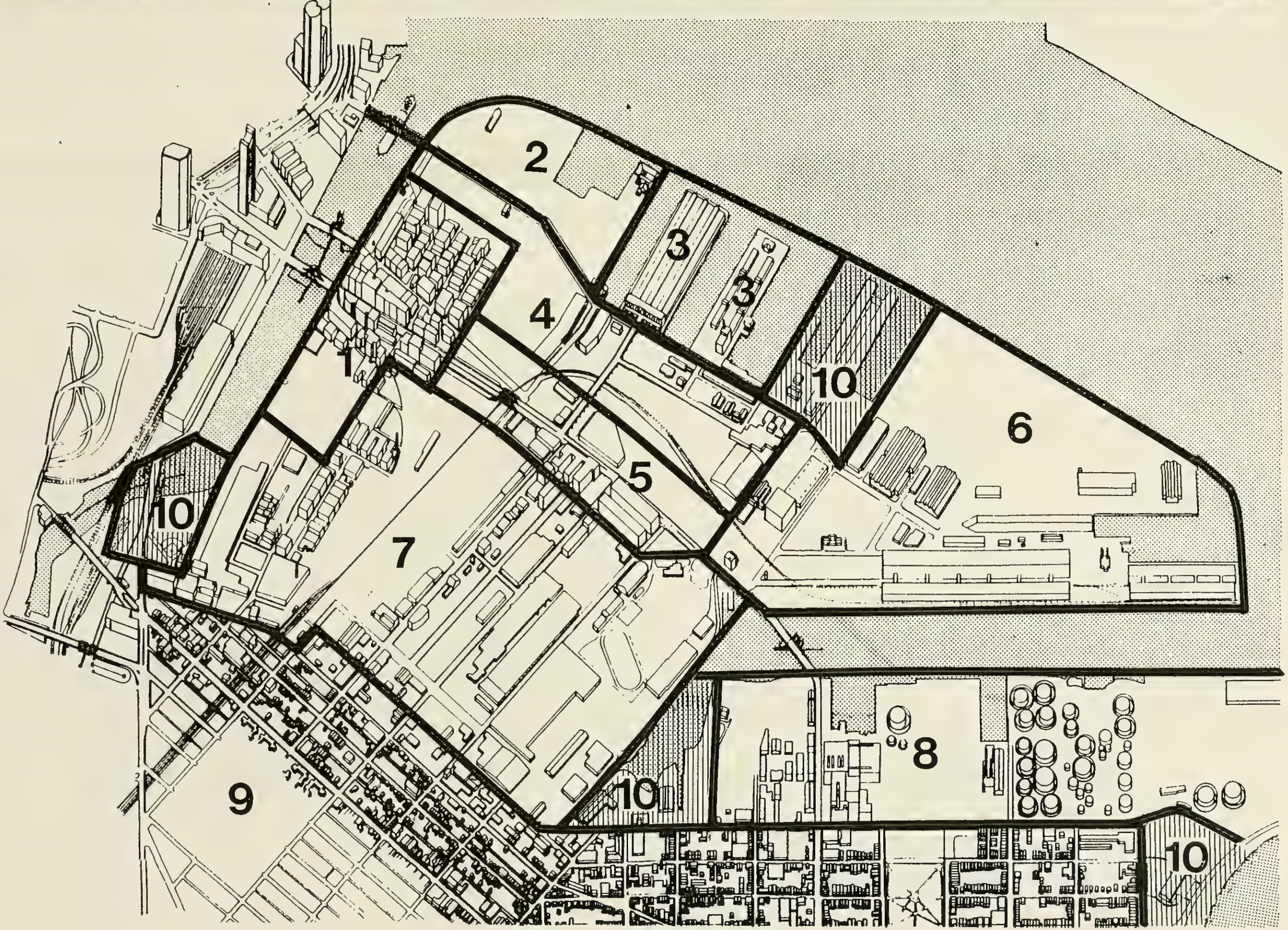
3. Develop the sense of an easy link with the Downtown Core so that the area serves as an extension of the Financial District and thereby reduces development pressure there. Preserve the character of the Boston Wharf Company area; protect printers, artists, lobstermen, and other small independent enterprises.

4. Accommodate the impacts and opportunities of the Seaport Access roadway. Provide major public transportation to the area in order to promote development and reduce future automobile congestion and parking problems.

5. Encourage residential uses to strengthen the permanent residents base and to ensure a rich mix of uses. Protect and reinforce existing South Boston residential area.

PROPOSED SUB-DISTRICTS

1. BOSTON WHARF HISTORIC DISTRICT
2. FAN PIERS
3. WORLD TRADE CENTER/FISH PIER
4. COMMONWEALTH FLATS
5. SUMMER STREET CORRIDOR
6. EDIC
7. GILLETTE INDUSTRIAL AREA
8. CONTAINERPORT
9. RESIDENTIAL/TRANSITIONAL AREA
10. OPEN SPACE RESERVE AREAS



SUB-DISTRICTS

The guidelines for the 9 proposed sub-districts will have the following components:

- Role/Uses: Harborside roles - maritime and leisure time activity; as new mix-use office branch of the Downtown Business Cove; as location of specialized uses such as printers and artists whose proximity to mixed-use office districts is desirable; as service area for adjacent industries; as connector between South Boston and the Harbor/Downtown. Encourage residential uses with an affordable housing component.

- Physical Character: Influenced by traditional character and harborside location and mix of uses - predominant character concern is to ensure an urban character and human scale within large developments on vast presently vacant acreage and as affected by the Third Harbor Tunnel/Seaport Access route. Identify distinctive areas.

- FAR: Floor Area Ratio as a way to control density.

- Height: Influenced by traditional scale and sensitive harborside location and by FAA flight path restrictions.

- Street-pattern: Extension of the existing street grid and development of more urban (smaller) block pattern.

- Public Spaces: Continuous public access and enlivening along water's edge; key connection to Boston's parks system to be established; urban squares and large, small and medium-sized parks to be established. Create open space reserve zones.

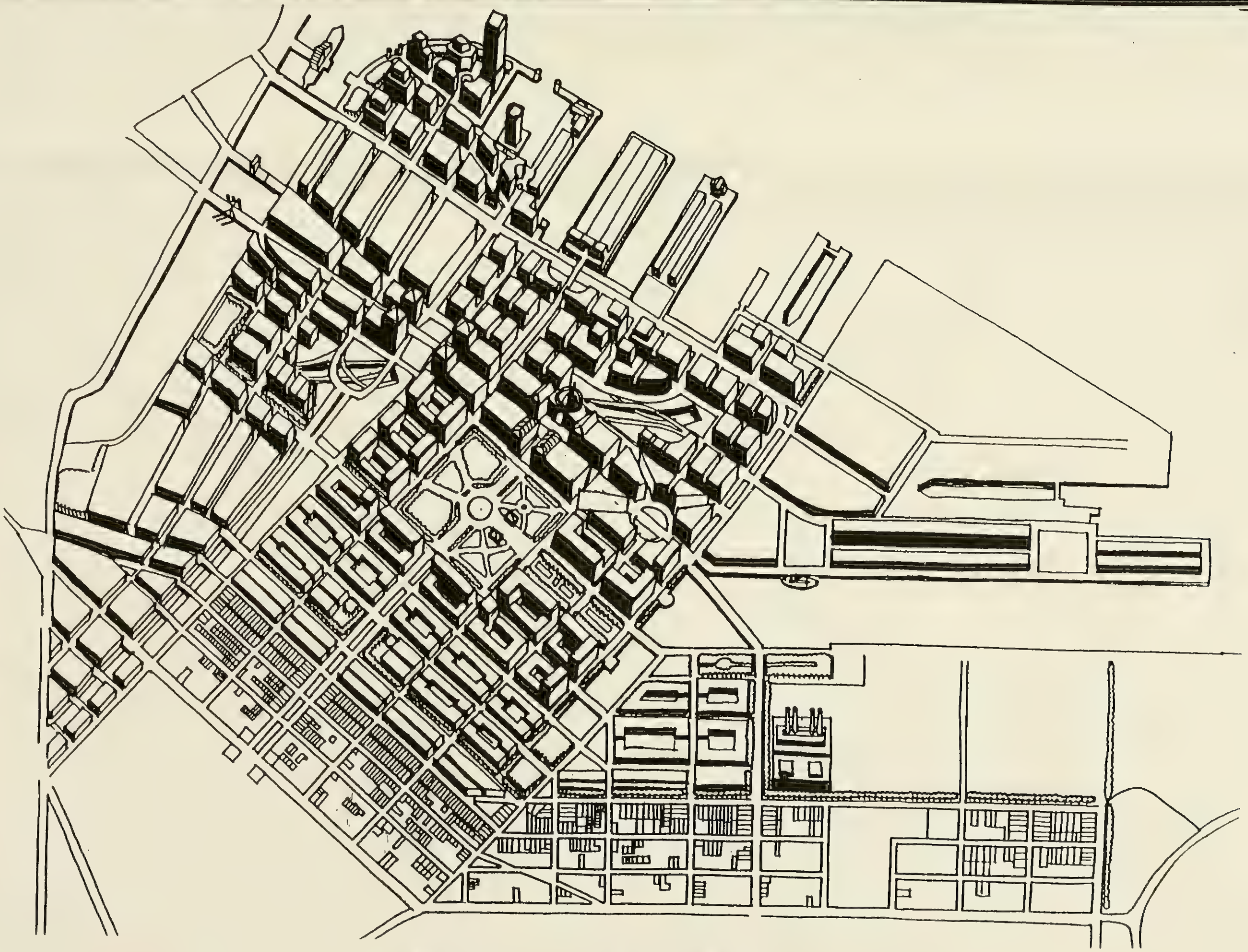


IMAGE OF SUB-DISTRICTS

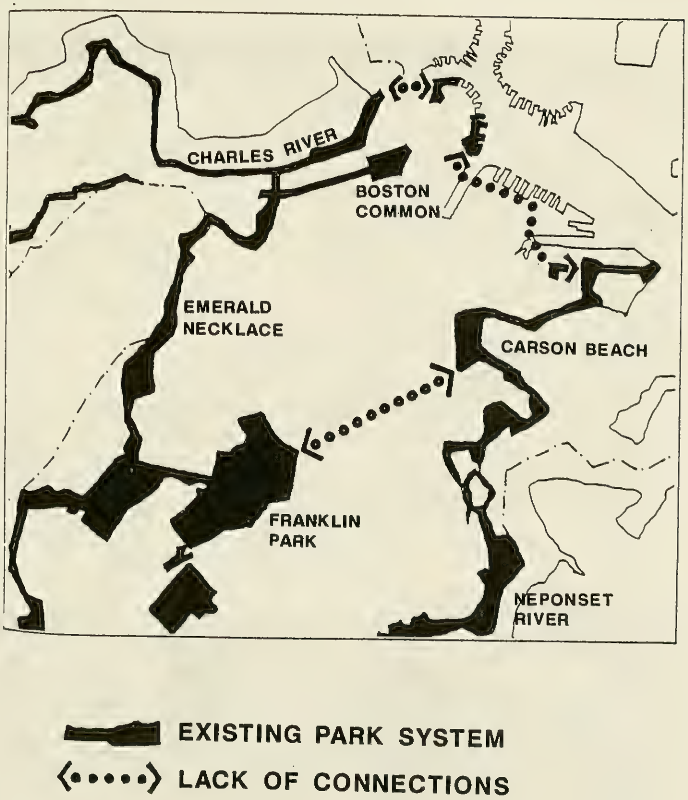
3.0
PUBLIC OPEN SPACE

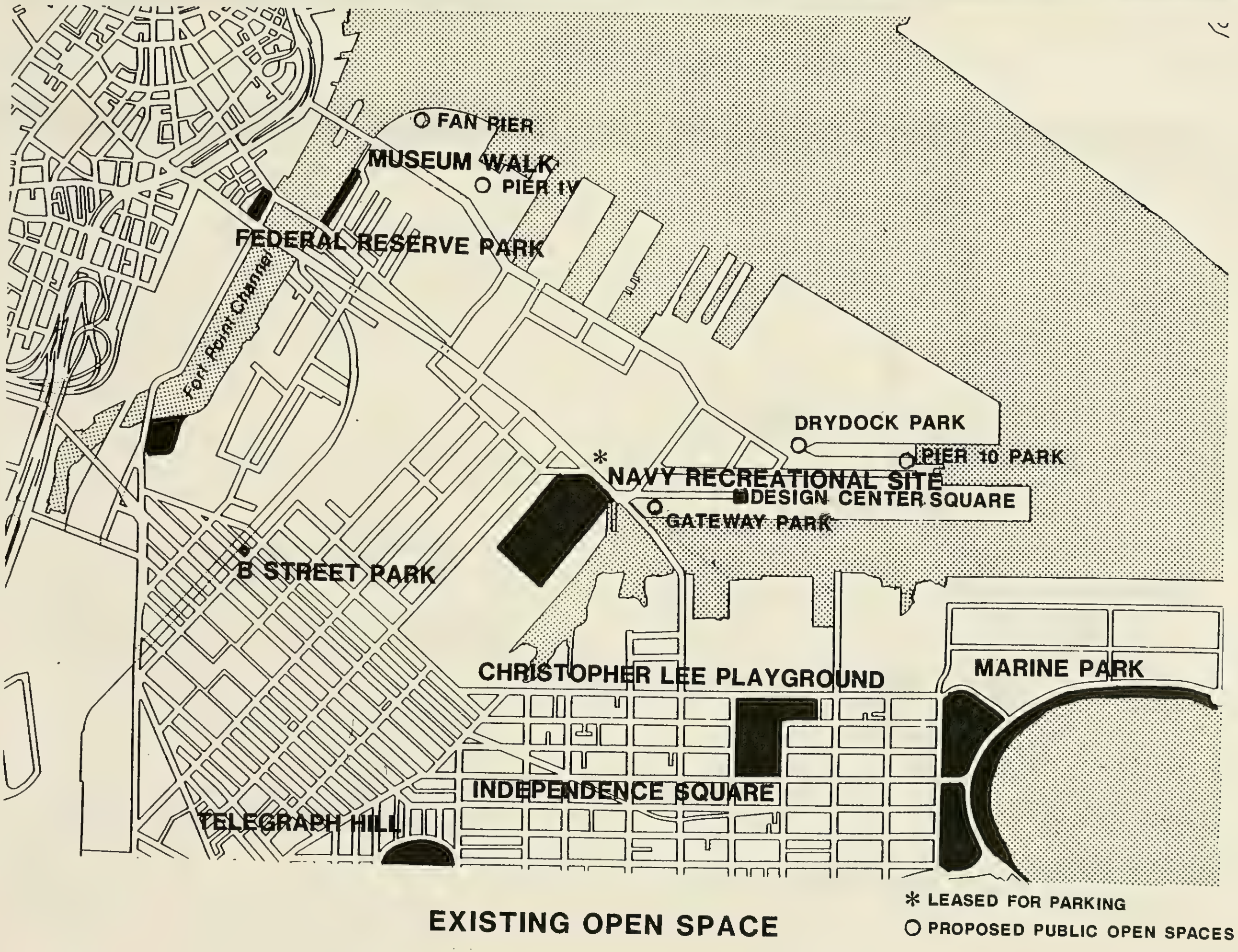
3.1 EXISTING OPEN SPACE

The South Boston Harborfront is one of the missing links in the Boston park system. From the Aquarium and Rowes Foster Wharves in Downtown to Castle Island in South Boston, there are no public open spaces. The exception is the Museum Walk along the east bank of the Fort Point Channel. This boardwalk in front of the Children's and Computer Museums becomes very active during the May-November period and hosts the Annual Boat Show. The major open space of the area was the Navy Recreational site along the Reserve Channel that was abandoned and now serves as parking area.

Among the new development proposals for the area are plans for new public open spaces. The Fan Piers will provide a mile and half of harborwalk, a canalwalk and various squares.

EDIC recently completed development of a public square in front of the renovated Boston Design Center and has plans for small parks along Dry Dock Avenue: Harbor Gateway Park, Dry Dock Park and Pier 10 Park. There are proposals for turning the Old Northern Avenue Bridge into a public pedestrian mall.





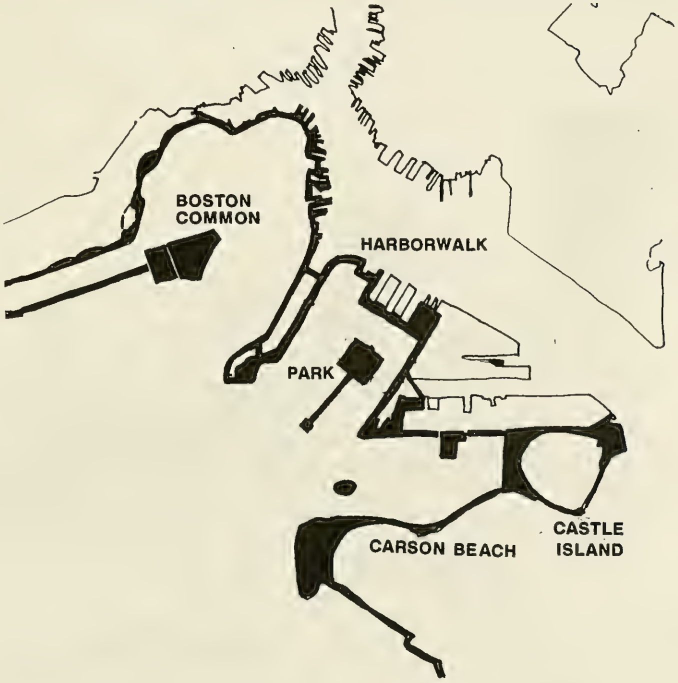
EXISTING OPEN SPACE

3.2 OBJECTIVES AND OPTIONS

The open space system of Fort Point Channel should offer citizens and visitors of Boston a great many new plantings. Rows of leafy, canopy trees will edge broad promenades and walks to provide dappled shade on hot, sunny days for the pleasure of strollers, joggers and busy citizens. Seasonal changes of color and texture, fragrant spring and summer flowering trees, wind protection and strong feeling of place will be other benefits. In the tradition of Olmstead, the open space system at Fort Point Channel should enhance the public realm providing opportunities for interaction among all of the city's residents.

Objectives

- To create a continuous Harborwalk along both edges of the Fort Point and Reserve Channels and along Piers 1 to 7.
- Creation of recreational parks at the inland end of both channels.
- Provide the area with one or more major parks that would become the focal point for the new subdistricts.
- Encourage the development of boulevards along existing and proposed major area connectors.
- Creation of small public open spaces and squares along the new boulevards.
- Buffer the proposed Seaport Access Road.
- Develop marine-related and recreational activities along the waters edge and the channels.

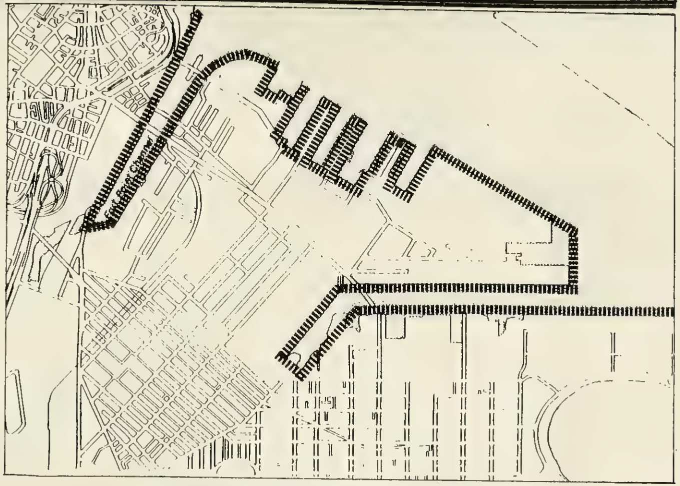


PLACE IN THE PARK SYSTEM

MAJOR PARK

Harborwalk

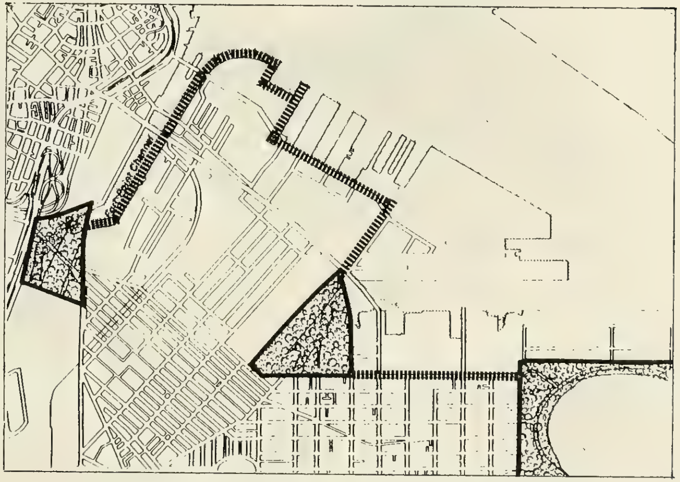
A public waterfront path, connecting the wharves and linking waterfront activities together. A broad spectrum of amenities and attraction will appeal to a broad spectrum of interests, returning the life of the city to the water's edge. A series of public spaces and public facilities along the walk which will provide opportunities for recreational and cultural activities. Marine-related uses to be encouraged so as to preserve the "working waterfront" character.



HARBORPARK EXTENSION - WATER WALKWAY

Major Park(s)

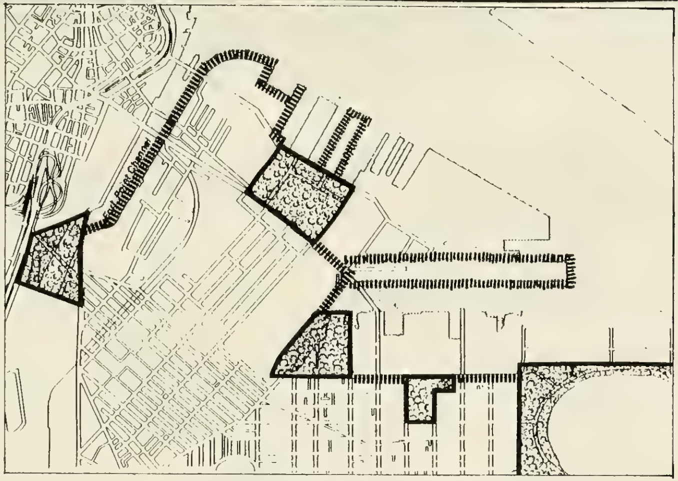
A central component of the open space system should be a large park; a garden space of urban character which would contain diverse areas for active and passive recreation. Borrowing its inspiration from Frederick Law Olmstead, designer of Boston's Emerald Necklace and Marina Park/Castle Island, this large park will provide "places for respite from the city, spaces to provide...a pleasure common, constant and universal...which results from the feeling of relief...on escaping from the cramped, confining and controlling circumstances of the streets of the town".



SERIES OF MAJOR PARKS ALONG LINEAL PARK SYSTEM

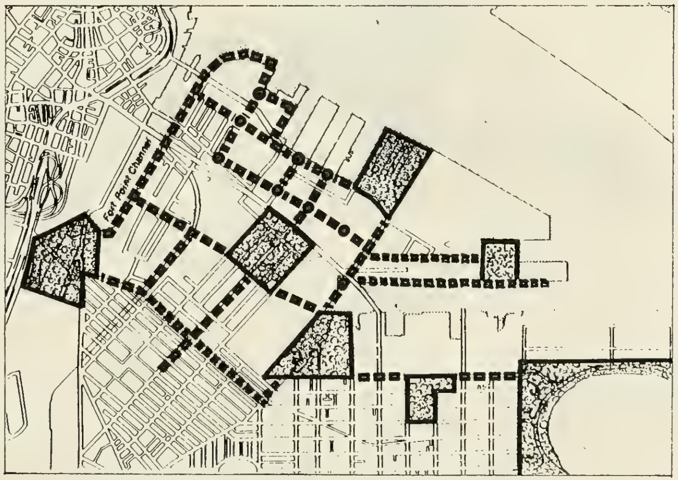
LINEAR PARK AND PROMENADE

Alternative 1: Locate major parks along the proposed Harborwalk and integrate the existing open spaces such as Independence Park and Castle Island Park. Major open spaces to be located inland of both channels that will serve as gathering places for land area water-related activities. A park in the Commonwealth Flats would help to buffer the Seaport Access Road and to create a new residential center for the Harborfront area.



ALTERNATIVE MAJOR PARKS

Alternative 2: Establish a comprehensive open space system that will provide the area not only with a continuous Harborwalk, but also with a diversity of public open space that would range from small squares at a neighborhood and sub-district level, to large parks both inland and along the waterfront's edge. Pier 7 and 8 could provide with a maritime related major public space. A series of boulevards would provide nice perspectives along New Northern Avenue, D Street, Congress Street, and Dry Dock Avenue in the EDIC property.



SYSTEM OF MAJOR PARKS, SQUARES AND OPEN SPACE

MAJOR PARK WITH CULTURAL FACILITY

4.0
TRANSPORTATION

4.1 EXISTING CONDITIONS

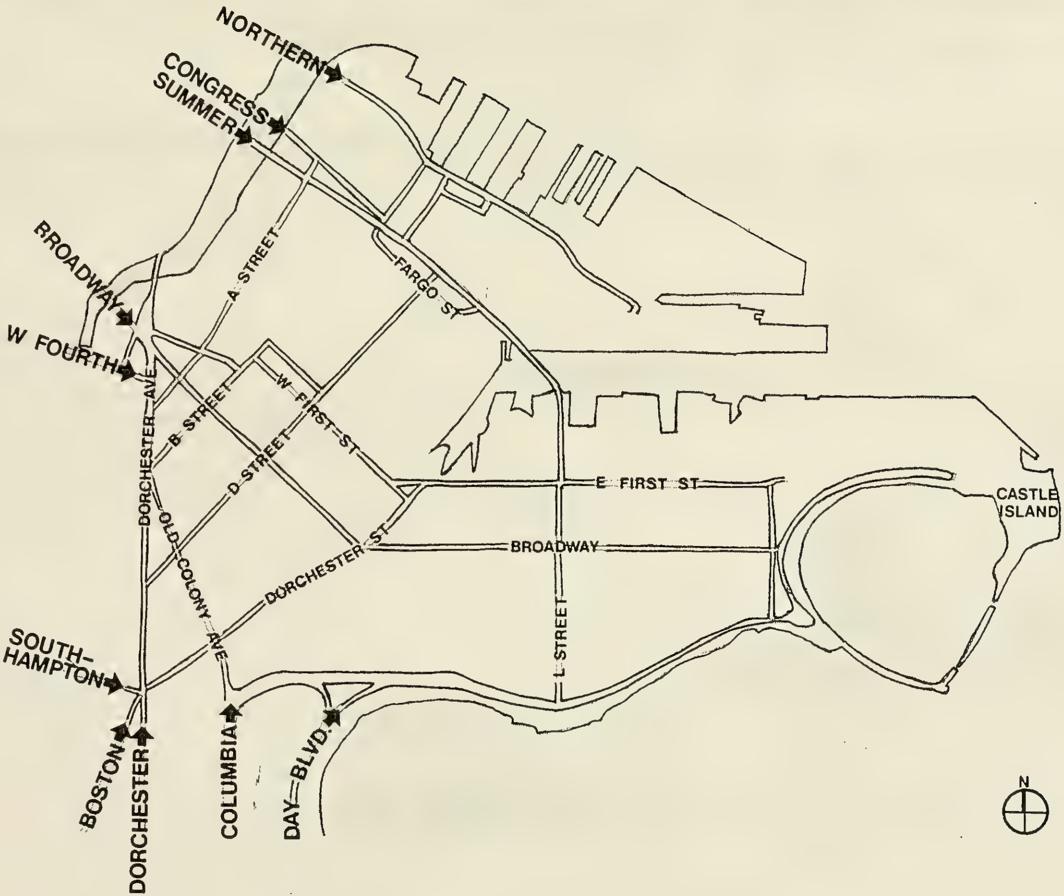
Regional highway access

A lack of adequate access has perhaps been the principal deterrent to the redevelopment of the Fort Point Channel area. The street network is fragmented, and connected at too few points to regional access corridors. Transit service is minimal, limited to a few bus routes that wind over bridges and streets that are in disrepair. Substantial truck traffic to and from the container port and the EDIC complex overwhelms residential areas in South Boston. The few connections to regional transportation corridors - at the Northern Avenue Bridge, at Summer Street and at West Broadway - become severe bottlenecks during the morning and evening rush hours.

One of the reasons for South Boston's existing level of industrial, seaport, and warehousing activity and its potential for significant expansion in these areas is its proximity to the regional highway network. South Boston's northern industrial section has connections to the Central Artery which, in turn, connects to the regional highway networks to the north, west and south. To the north, the Northeast Expressway (Route 1) and Interstate Route 95, Interstate Route 93, the Tobin Bridge, and the Sumner and Callahan Tunnels are all accessible via the Central Artery and local surface streets. To the west, the Massachusetts Turnpike is accessible via the Central Artery, the Broadway Bridge, Summer Street Bridge, or West Fourth Street Bridge. Regional access to the south from South Boston is provided by the Southeast Expressway, which can be reached via the Central Artery or directly by exiting South Boston from one of the roadways on its southern border.

Eight of the ten access routes to South Boston from the regional road network require passing over bridges that cross either the Fort Point Channel or the CONRAIL, MBTA, or AMTRAK railroad tracks. Summer Street, Broadway, and Columbia Road Bridges are the major entrance/exit routes to South Boston, with daily traffic volumes in excess of 20,000 vehicles per day. Of the ten entrance points, all but Columbia Road and Day Boulevard serve as major entrance points for trucks, with the majority of these trucks bound for the northern industrial section of South Boston.

Thus a key component of any planning effort must be the improvement of accessibility to the area. This must take the form of a comprehensive transportation system integrating an upgraded street network with the Third Harbor crossing, and long-range incorporation of mass transit for the area. Furthermore, the potentials for extending the 2-level street system (see Section I) should be studied, along with an analysis of different modes of transportation, from improved bus loops, light rail options and added fingers to the principal MBTA lines. This section of the report elaborates the existing transportation deficiencies and examines some of the above options.

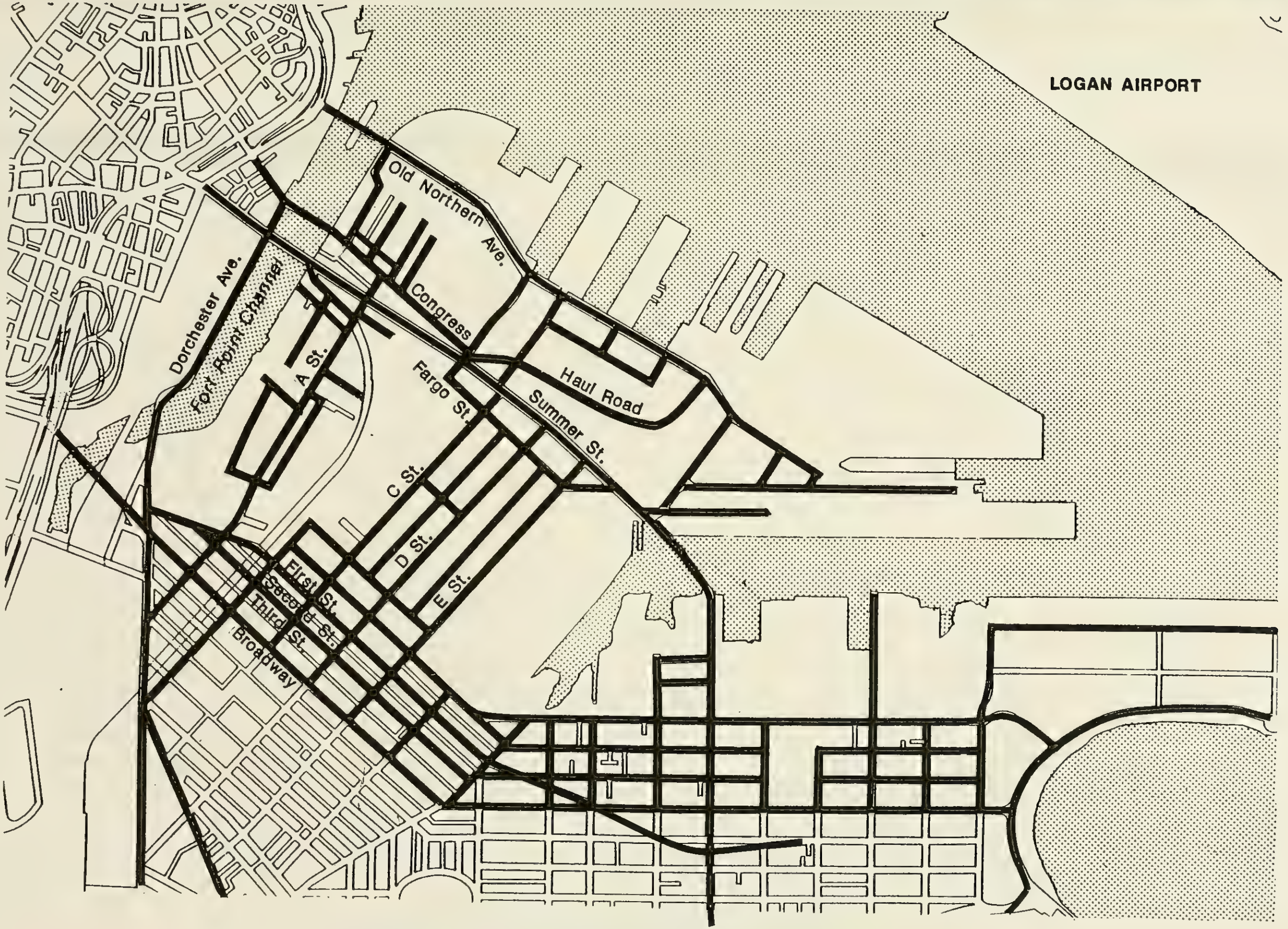


ACCESS POINTS TO SOUTH BOSTON

Street pattern

The existing street pattern is fragmentary and discontinuous. Though rail yards are long time gone and replaced by at-grade parking and vacant land, no roads have been built in the last 50 years in the South Boston Harborfront. Therefore, only a few streets have to carry most of the traffic to and through the area. This is further emphasized by the peninsula-shape of the study area which stresses the streets that connect to the existing bridges over the channels.

Those streets are: Old Northern Avenue, Summer Street, Congress Street-Haul Road and Broadway. In the area north of Summer Street north-south connections are complicated and scarce thereby forcing traffic to the Fort Point Channel bridge. On the contrary in the area south of Summer Street there are no east-west vehicular connectors therefore overloading Summer Street, Broadway and the truck route along First Street.
The lack of a comprehensive street pattern forces trucks, cars and buses to share the same right of way, and the lack of hierarchy forces streets to perform as citywide connectors.



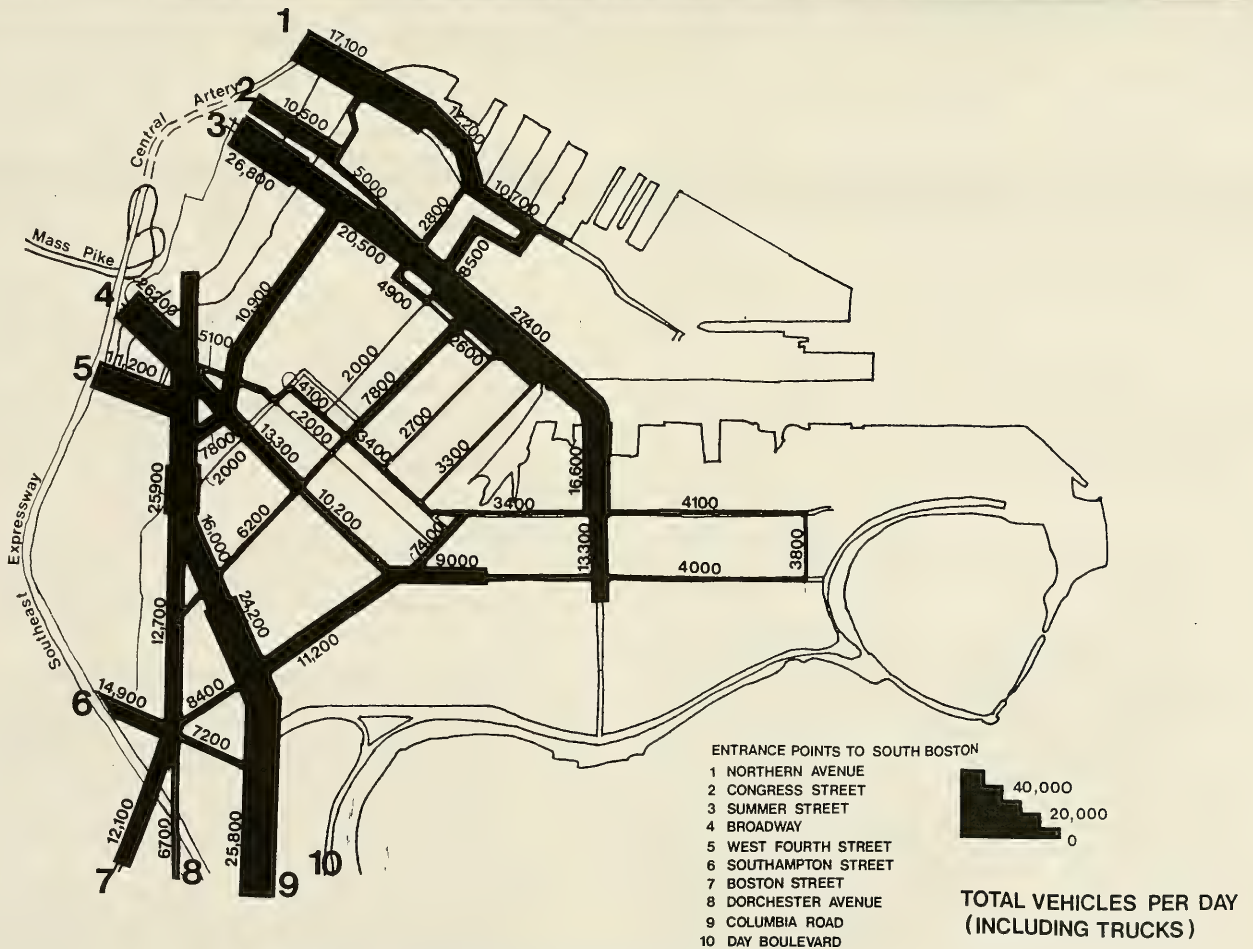
STREET PATTERN : EXISTING CONDITIONS

Traffic characteristics

Considering how underdeveloped much of the Fort Point Channel area is, the average week day traffic volumes are surprisingly high. This is in part due to the heavy truck traffic generated by the container port and existing light industrial uses but also due to the through traffic generated by commuters bypassing portions of the Central Artery and Southeast Expressway. This through traffic often conflicts with local community travel patterns and truck movements along the existing truck route, resulting in congestion and delays to both motorists and truck drivers.

The heavy traffic volumes are also due to the area's ample surface parking lots which are used as overflow and/or inexpensive commuter parking for downtown. While intersections are the most common congestion points, South Boston also has several roadway links that experience significant congestion. This is due to high proportion of truck traffic, on-street truck loading, lack of parking restrictions, railroad tracks in the roadways themselves, and poor roadway surface conditions. Portions of Northern Avenue, Summer Street, Congress Street, 'A', 'D', East and West First Streets, West Broadway and Dorchester are examples. All of these roadways are major routes for automobiles as well as trucks.

As additional development planned for the area proceeds, the double problem of more traffic with fewer parking area will place even greater pressure on the local streets and the few connections to regional arteries.



AVERAGE WEEKDAY TRAFFIC VOLUMES

Truck movement pattern and routes

Most of the trucks travelling into and out of South Boston have origins or destinations north of First Street in the northern industrial section. These trips are for both industrial activities and delivery of goods and commodities. A smaller volume of truck traffic also has destinations in the Broadway commercial areas for local delivery of goods and commodities.

There is a designated truck route in South Boston, established for the purpose of keeping trucks out of the residential neighborhood. All streets north of First Street allow truck traffic. However, south of First Street truck restrictions apply. The designated truck route includes Dorchester Avenue, 'A' Street, Broadway, 'C' Street, First Street and portions of West Second Street.

The adjacent map clearly shows that the majority (75%) of truck trips to South Boston are bound for the northern industrial area. Of these trucks, 45% come into South Boston from the west or south.

Trucks entering South Boston from the west use either the Broadway or West Fourth Street Bridges and face congestion along Broadway, Dorchester Avenue and First Street. This often results in trucks taking shortcuts and using the residential portions of 'B' and 'D' Streets and West Second Street, where heavy trucks are not allowed.

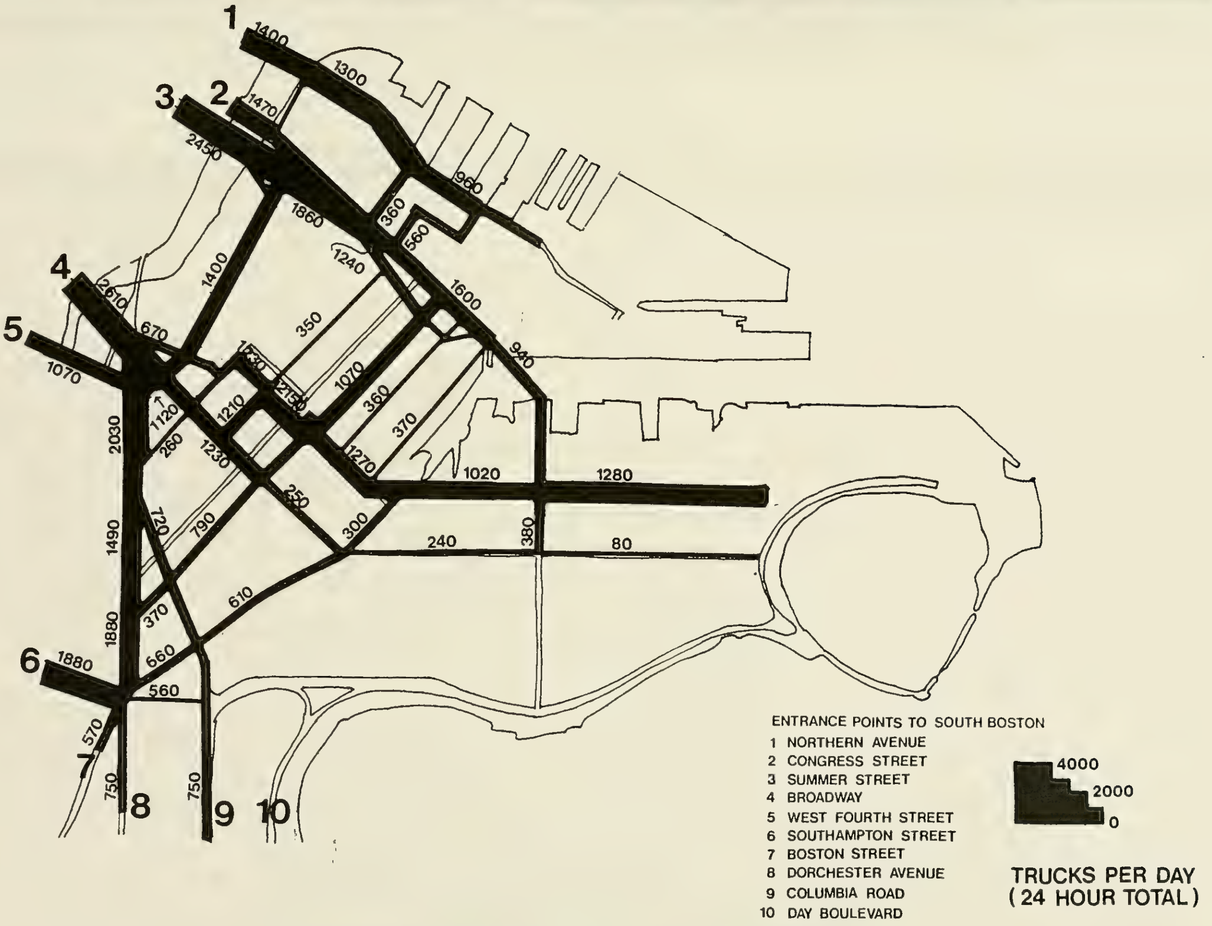
A larger percentage of trucks entering from the west, particularly those using Broadway, appear to be bound for points located between Summer Street and First Street.

Trucks from the south use 'B' and 'D' Streets, Dorchester Street, Old Colony Avenue, and restricted portions of Broadway as bypass routes to avoid Dorchester Avenue and reach the northern industrial section. They have origins/destinations along East First Street and in the northern industrial section. They are thought to be the most serious violators of the designated truck route as they short cut along residential streets to avoid congestion on the truck route.

Most of trucks entering South Boston over one of the northern bridges, Northern Avenue, Congress Street, or Summer Street, are bound for points north of First Street and thus have no reason to travel near the residential area in the south.

The residential area of South Boston accounts for only 8 percent of the truck movement originating in or destined for South Boston.

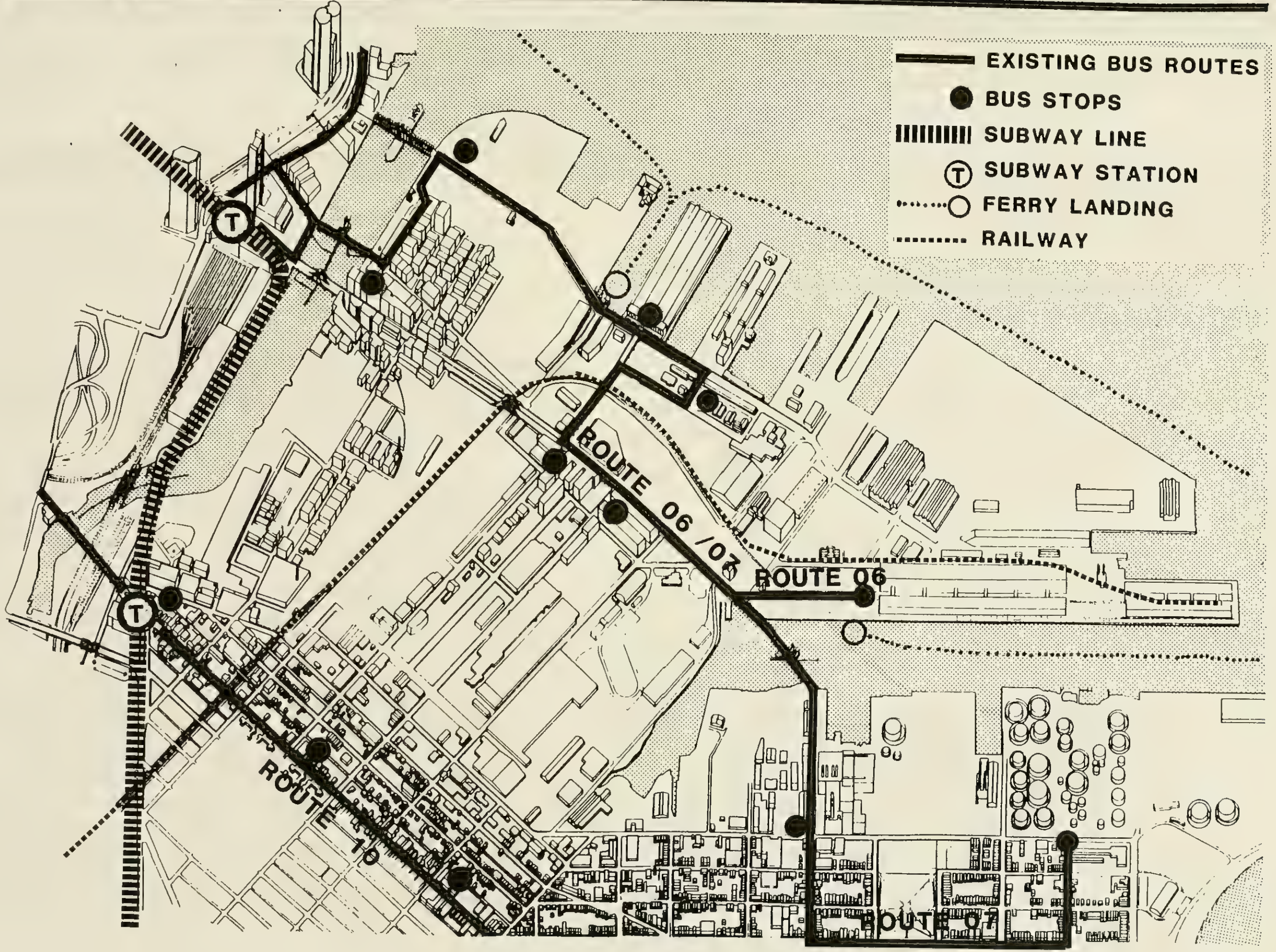
The origin/destination survey reveals a fairly even distribution of trucks bound for South Boston from throughout the Boston metropolitan region. The highest percentage of trucks from the north enter South Boston via the northern entrance points. Similarly, the highest percentages of trucks from the west and the south enter South Boston via western and southern entrance points, respectively. The most heavily used major roadways to South Boston appear to be Interstate Route 93 from the north, the Southeast Expressway from the south and the Massachusetts Turnpike from the west according to the survey data.



AVERAGE WEEKDAY TRUCK VOLUME

Mass Transit

Existing transit facilities consist of two bus lines, one along Broadway, the other winding through portions of Congress, Northern Avenue and Summer Streets. The MBTA Red Line skirts the site area to the west and south. Its South Station stop can reasonably serve new development directly across the Fort Point Channel. The Broadway and Andrew Square stops serve the westerly edges of the South Boston residential communities. To the south, Columbia Station will probably increase in importance as the redevelopment of the Columbia Point area proceeds. However, beyond the intermittent bus service, there are no transit facilities for the major portions of the study area along the piers and between the Northern Avenue and Summer Street corridor, precisely where a large amount of new development is being proposed. This is the area for which an analysis of alternative transit systems is most necessary. Another currently absent mode of transit, but with much potential as the Harborpark concept evolves is water based transit.



EXISTING MASS TRANSIT

Transportation deficiencies

The accompanying chart identifies some of the key deficiencies of the local transportation system. All eight problem areas must be addressed by both improving street alignments and capacities and beginning to plan for incorporating local mass transit.

South Boston residents and businesses have had problems with truck access and traffic movement for a long time because of restricted capacity bridge connections to the regional transportation network, poor roadway geometrics at intersections, and generally congested streets. Access to highways in the south and west from the industrial areas north of First and Second Streets is especially difficult, and as a result, truck movements intrude on residential neighborhoods.

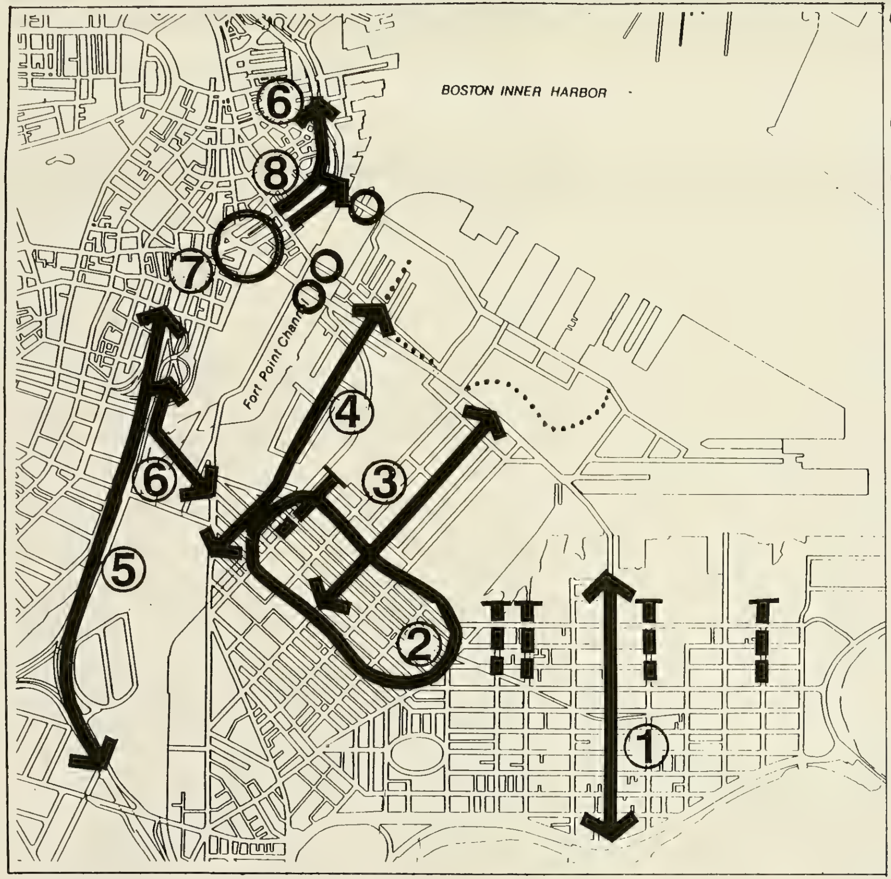
On an average day, approximately 170,000 vehicle trips were made in and out of South Boston - of this number almost 13,000 were truck trips. South Boston has a higher percentage of heavy truck traffic on its streets than the Boston average, 7% vs. 5%. On some streets the truck percentage averages 10-15%. On parts of First Street trucks account for 50% of the traffic.

Both Broadway and Andrew Square intersections, which are used by both trucks and autos to enter/leave South Boston, regularly function with severe traffic deficiencies. Both of these intersections are on the designated truck route. Most of the intersections and roadway links on the designated truck route are characterized by congestion and poor geometrics, particularly for large trucks. Trucks bypassing the route use residential streets thus creating safety problems.

The significant increases in truck and auto trips associated with expected development of nearly 700 vacant and underutilized acres in South Boston can only aggravate this existing congestion.

The currently designated truck route includes residential streets. It is congested and indirect, thereby encouraging many truck drivers to risk traffic tickets by taking shortcuts which they find more expeditious than the designated route. When truck restrictions are not enforced citizens complain, and when they are enforced businessmen complain. As a result of these difficulties, existing business concerns suffer from inadequate and uncertain access; development of vacant industrial land north of First and Second Streets is inhibited; and residential streets are congested, noisy and unsafe.

One of the prime causes of South Boston's traffic problems is the area's geography. Originally an island, South Boston is connected to the mainland by ten bridges which provide its access to the regional highway system. Today these bridges (and Columbia Road) serve both industrial and residential users for north-south and east-west access. The location of industrial and residential uses with respect to these connections generates traffic conflicts. A number of trucks with destinations and origins north of First Street find it more expedient to shortcut through residential areas to reach existing bridge connections than to follow the designated truck route to the regional highway system.



1. NARROW LANES, CURB PARKING AND PEDESTRIANS RESTRICT TRAVEL SPEEDS.
   TRUCK/PEDESTRIAN CONFLICTS
2. SOUTH BOSTON NEIGHBORHOOD VS. TRUCKS
3. AUTO/TRUCK CONFLICTS
4. AUTO/TRUCK CONFLICTS
5. CONGESTION NORTHBOUND AND SOUTHBOUND ON CENTRAL ARTERY
6. HEAVY TURN VOLUME IN NARROW LANES
7. PEDESTRIAN/AUTOMOBILE CONFLICT
8. CONGESTION: TWO HEAVY CONVERGING TRAFFIC STREAMS

O CONGESTION ON BRIDGES

⁞ CONFLICTING TRUCK LOADING

TRANSPORTATION DEFICIENCES

4.2 TRANSPORTATION PROPOSALS

Roadway Improvements

The planned $2.5 billion Third Harbor Tunnel/Central Artery Depression could dramatically improve access by automobile to the Fort Point Channel area, already strategically located between booming downtown Boston, Logan Airport, and residential South Boston. The prospect of enhanced Fort Point Channel accessibility in the 1990s -- plus the presence of large, relatively underutilized tracts of land -- has heightened interest in major commercial and residential development there. Boston must respond to these realities with foresight and ingenuity to capture the opportunities and avoid potential negative effects, such as displacement and new congestion.

The feasibility of balanced development there depends not only on the auto access to be provided by the Third Harbor Tunnel, but also on comparably dramatic improvements in mass transit. This can be accomplished by one or a combination of the following:

1. Transportation Systems Management

   An important component of the city's transportation management program is preparing neighborhood transportation studies to identify local traffic, parking, and access issues. The Fan Pier/Pier 4 developers have agreed to support a transportation study for the South Boston community.

   Other management measures planned for Fort Point Channel include:

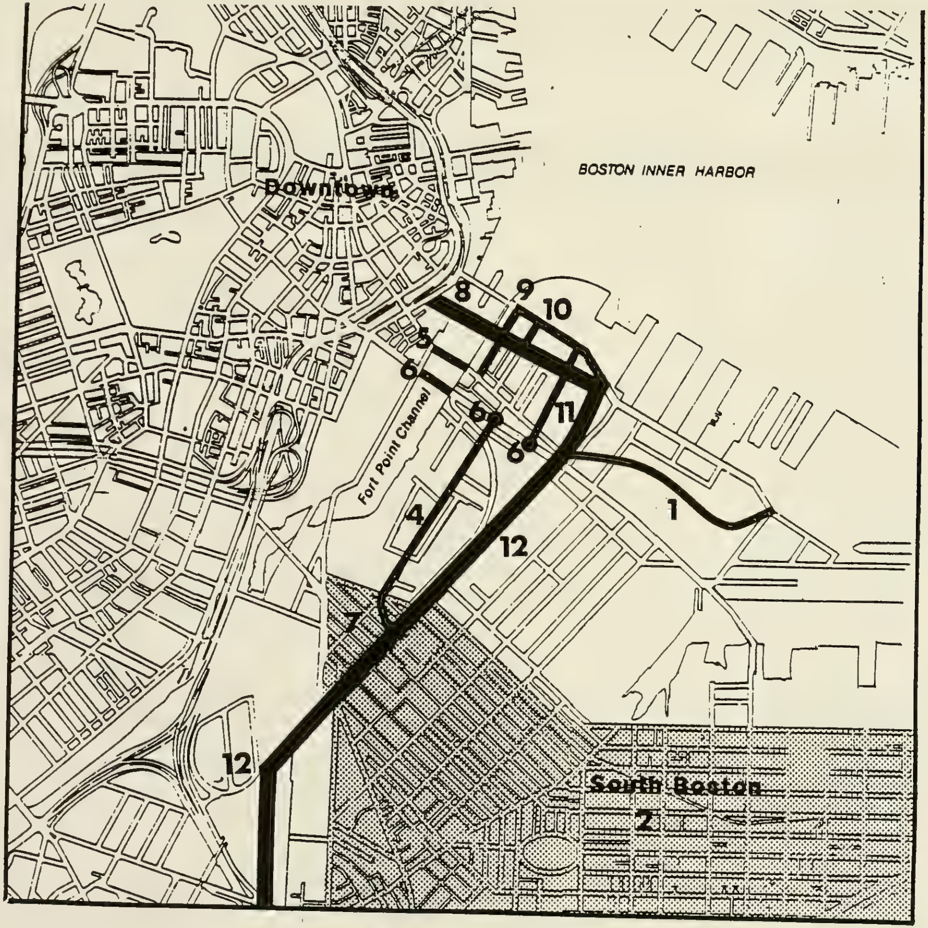
   - Implementation of identified neighborhood traffic improvements
   - Installation of new/upgraded traffic signals
   - Repaving of 'A' Street

2. Highways, Arterials, and Bridges

   Improving and upgrading critical roads, intersections, and bridges can improve the flow of traffic and enhance safety. Given the projected traffic increases in the Fort Point Channel area, such improvements are vital. Plans currently underway for improving roads and bridges include the following.

3. Roadway Construction:

   - Completion of construction of the Haul Road
   - Construction of relocated New Northern Avenue, Sleeper Street and Seaport Access connector roadway inbound between Old and New Northern Avenues
   - Construction of South Boston By-pass
   - Construction of Northern Avenue connector roadways, including Pittsburgh and Farnsworth Streets, and Old Northern Avenue



1. Haul Road
2. Neighborhood Traffic Improvements
3. New/upgraded signals
   - Harbor & Summer
   - "D" & West Seventh
   - Dorchester Ave. & Fr. Anthony Sonjin Way & Maj. O'Connor Way
   - "E" & West Third
   - East Eighth & L
   - L & Fifth Street
4. Repave "A" Street
5. Rehab/Reconstr. Congress Street Bridge
6. Rehab/Reconstr. Summer Street Bridge
7. Rehab/Reconstr. West 4th/5th/6th Street Bridges
8. New Northern Avenue Bridge
9. Relocated (new) Northern Avenue, Sleeper Street and Seaport Access Connector between new & old Northern Avenue
10. Connector Roads
    - Pittsburgh Street, Farnsworth Street, and old Northern Avenue
11. Seaport Access Connector Roads
12. South Boston By-pass

SHORT-RANGE ROADWAY IMPROVEMENTS

- Construction of the Seaport Access Roadway and connector roads
- Construction of Third Harbor Tunnel
- Depression of the Central Artery

4. Bridge Program:

- Rehabilitation/reconstruction of:
  - Congress Street Bridge
  - Summer Street Bridges
  - West 4th, 5th, and 6th Street Bridges
  - Northern Avenue Bridge

5. Parking

As traffic increases in Fort Point Channel so will demand for parking spaces. The city seeks to balance this growing demand for parking while addressing concerns about air quality and traffic congestion.

Strategies to implement these goals include:

- Construction of 3,000 additional spaces at South Station and along the old Colonial right-of-way, designed with direct ramps to the highway system and linked to a people mover for distribution.

- Reserving a percentage of project-related spaces for midday short-term users.

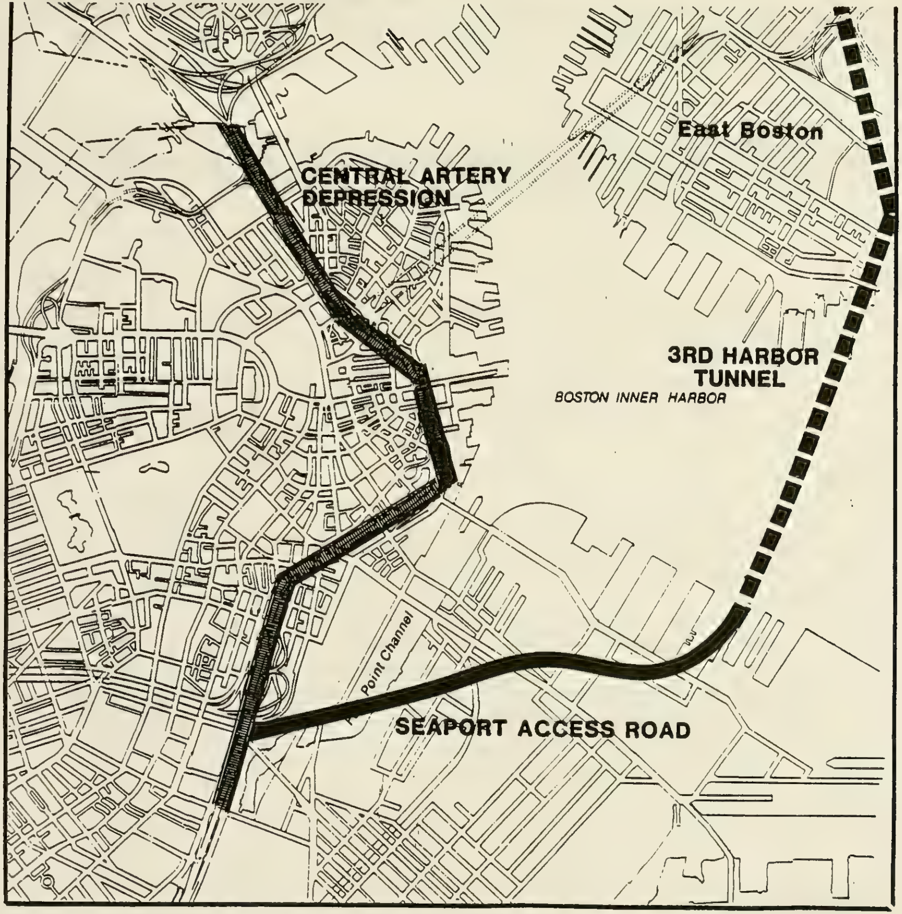
- Reserving a percentage of project-related spaces for vanpools and car-pools.

- Introduction of pricing polices that encourage optimum use of spaces and ridesharing.

6. Alternative Modes of Transportation

The location of the Fan Pier/Pier 4 projects is ideal for certain alternative modes of transportation, particularly water transportation and pedestrian access. The city is encouraging the developers to explore the use of water transportation in connection with these projects. Water taxis and shuttles, commuter service, and private boats can play a role in providing access to this waterfront site.

Harborpark has recently joined the Freedom Trail as a prominent component of the waterfront pedestrian landscape. Pedestrian access to the sea will play an increasingly important role in Boston. The Fan Pier/Pier 4 developments will provide such access.



- Seaport Access Rd. (approx. .6 Bil.)
- Third Harbor Tunnel (approx. .7 Bil.)
- Central Artery Depression (1.3 B.)

Total Cost 2.6 B.

LONG-RANGE ROADWAY IMPROVEMENTS

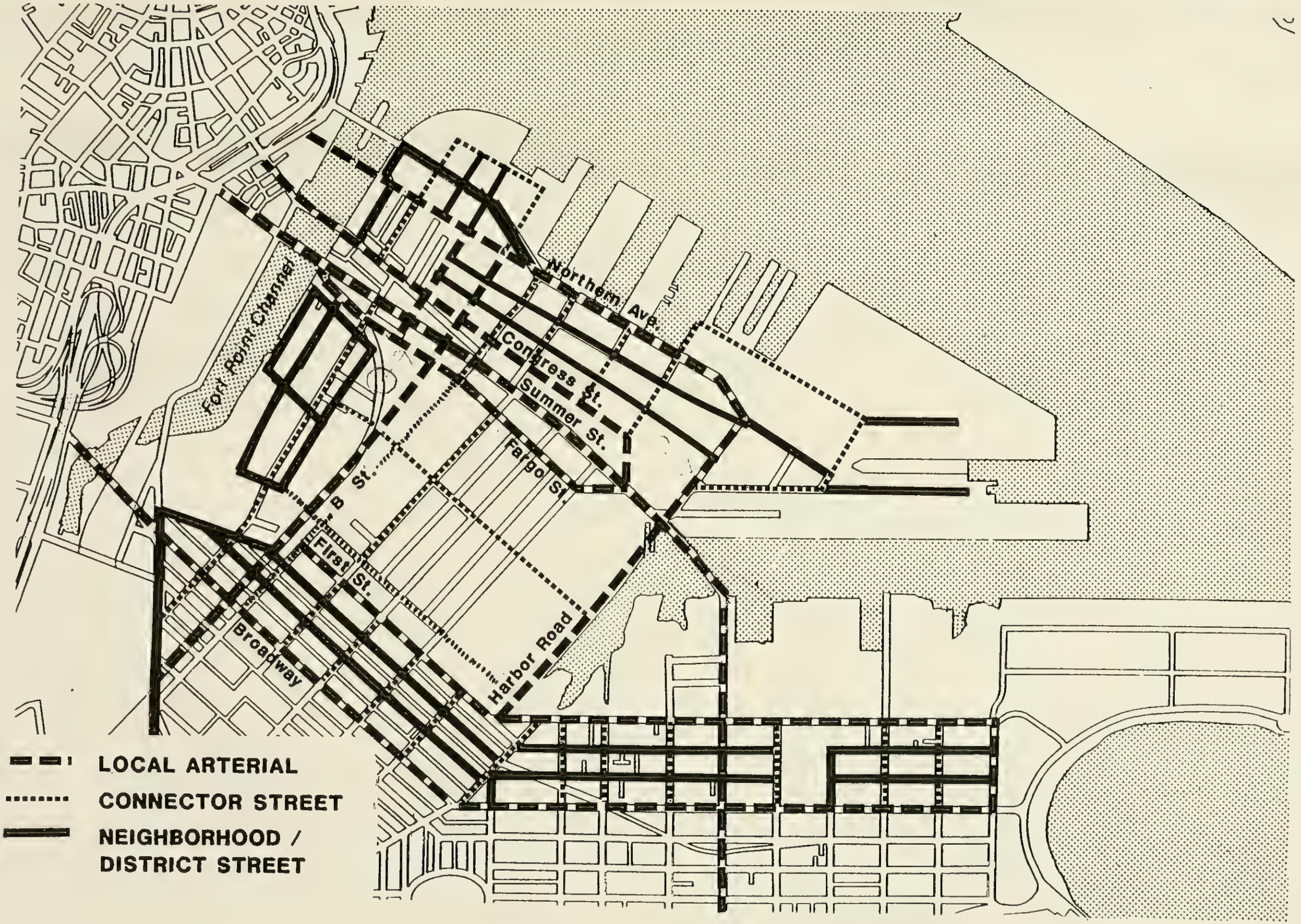
Street pattern extension

Northern Area

- Extend the Boston Wharf street pattern toward the Fan Pier
- Extend a grid system into the Commonwealth Flats
- Extend Congress Street West to serve as a main address for future development in the area
- Extend Fargo Street to serve as an at-grade street to work with Summer Street
- Connect to the Third Harbor Tunnel by the way of regular streets avoiding high speed ramps that cut through the new development areas.
- As part of the S. A. R. work realign Viaduct Street to take full advantage of the beautiful beaux art facade of the World Trade Center.

Southern Area

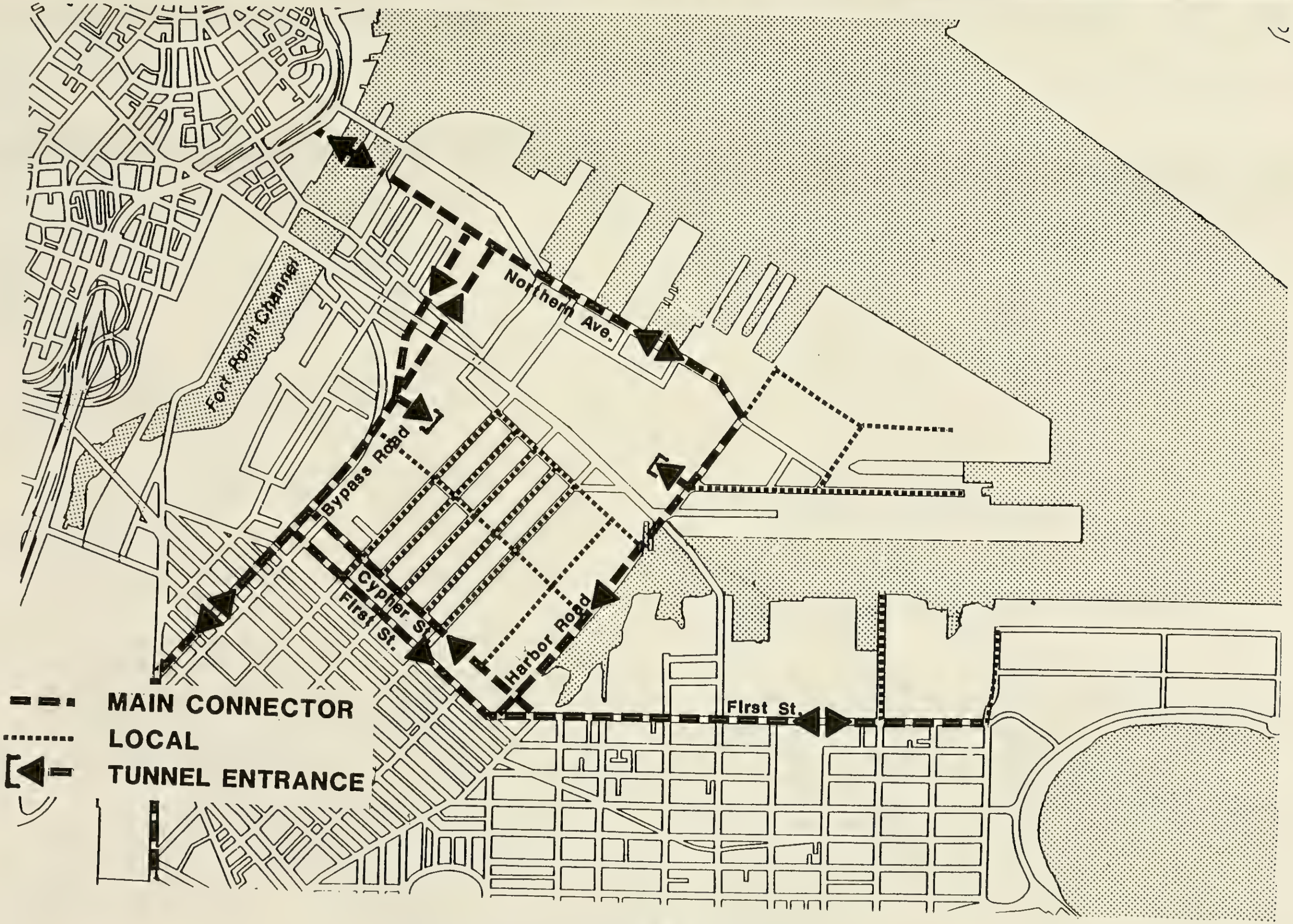
- Create a new Bypass road along the railroad right of way to generate a truck route that could connect with a travel road in the area north of Summer Street.
- Harbor Road (Pappas Way) to serve as a truck route
- Provide a east-west connect between Bypass Road and Harbor Road to serve the central area
- Ensure a connection of the Bypass Road with the Southeast Expressway and allow for a connection to the truck route along First Street.


Northern Ave.
Congress St.
Summer St.
Fargo St.
B St.
First St.
Harbor Road
Broadway
Fort Point Channel
LOCAL ARTERIAL
CONNECTOR STREET
NEIGHBORHOOD / DISTRICT STREET

Proposed truck routes

The proposed Bypass Road will connect to the Southeast Expressway to the South, and the Haul Road/ Northern Avenue to north. This truck-only route should provide easy access to the existing truck route along Cypher and First Streets which connect to Harbor Road. Most of the turns should be designed to accommodate trucks, and all other traffic to be discouraged to ensure an efficient truck route at all times, (including vehicular peak hours). Otherwise trucks will continue to look for easier routes and disrupt residential and commercial areas.

The connections from the trucks origin and destination to the proposed Seaport Access road have to be efficient and clear avoiding a long detour before reaching the ramps.



PROPOSED TRUCK ROUTES

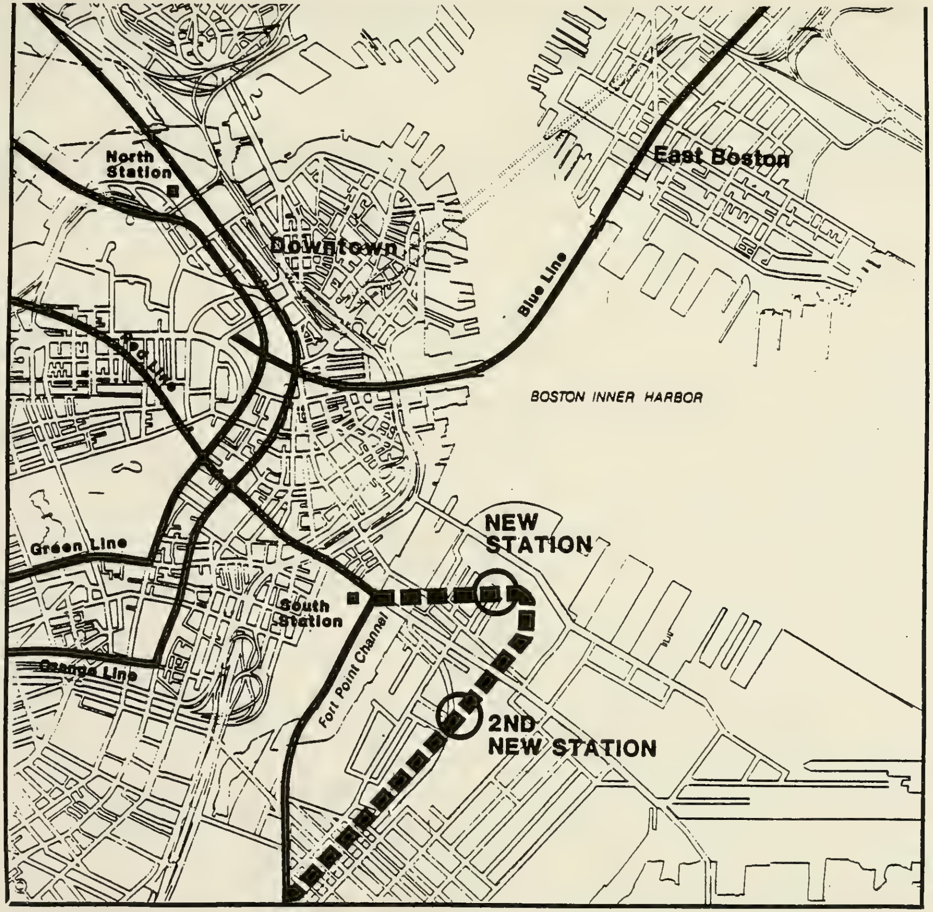
Public Transportation Proposals

Public transportation is the backbone of Boston's transportation system. During morning and evening rush hours, about 65 percent of the people heading to downtown Boston use public transportation. As the Fort Point Channel area is developed, more and more people will seek access to that area for jobs, shopping, and residential trips. Current public transportation service to Fort Point Channel is minimal, limited to a few bus routes, and needs to be expanded.

Some short-term improvements to public transportation service to this area, anticipated for 1990, include:

- Lengthen the platforms on MBTA Red Line to allow longer trains and thus increase capacity.
- Initiation of shuttle bus service between transit stations and development sites in the area.
- Development of a people mover loop to distribute passengers from South Station to the piers and move drivers who park at new fringe parking garages (to be developed at exit ramps from the expressway network).
- A new Blue Line branch into Logan Airport, joining the Third Harbor Tunnel over to the Fort Point Channel area and the Red Line, possibly continuing westward to the Kenmore or Dudley areas. Estimated cost: $250-350 million to Broadway; another $200-300 million westward.
- A Red Line diversion from South Station into the Fort Point Channel area, rejoining the current alignment bear Broadway. Estimated cost: $150-250 million.
- A Massport-operated, medium-scale transit line (people mover, light rail or monorail) linking Logan, the World Trade Center and South Station. Estimated cost: $200-300 million.
- A light-scale people mover to distribute and collect passengers to and from any of the above. Estimated cost: $10-30 million per mile.
- Widespread bus service.
- Well designed water taxi and shuttle systems.

Fort Point Channel's future transit networks should be designed to distribute auto drivers who will use major new parking facilities to be located near the on- and off-ramps of the Third Harbor Tunnel and who will transfer to transit to reach their final destinations in the Fort Point Channel area or downtown proper. Between 5,000 and 10,000 spaces should be provided as part of an overall parking plan for all of central Boston.



- 1 or 2 or 3 new stations
- Delays to Red Line users
- Rail rapid transit
- $100-200 million

Proposed Red Line Loop
Existing MBTA Transit Lines

RED LINE LOOP

- Link cheaper remote parking to new developments (1.7 miles; $40-100 million)
- Extensions along Central Artery and/or Midlands
- People mover

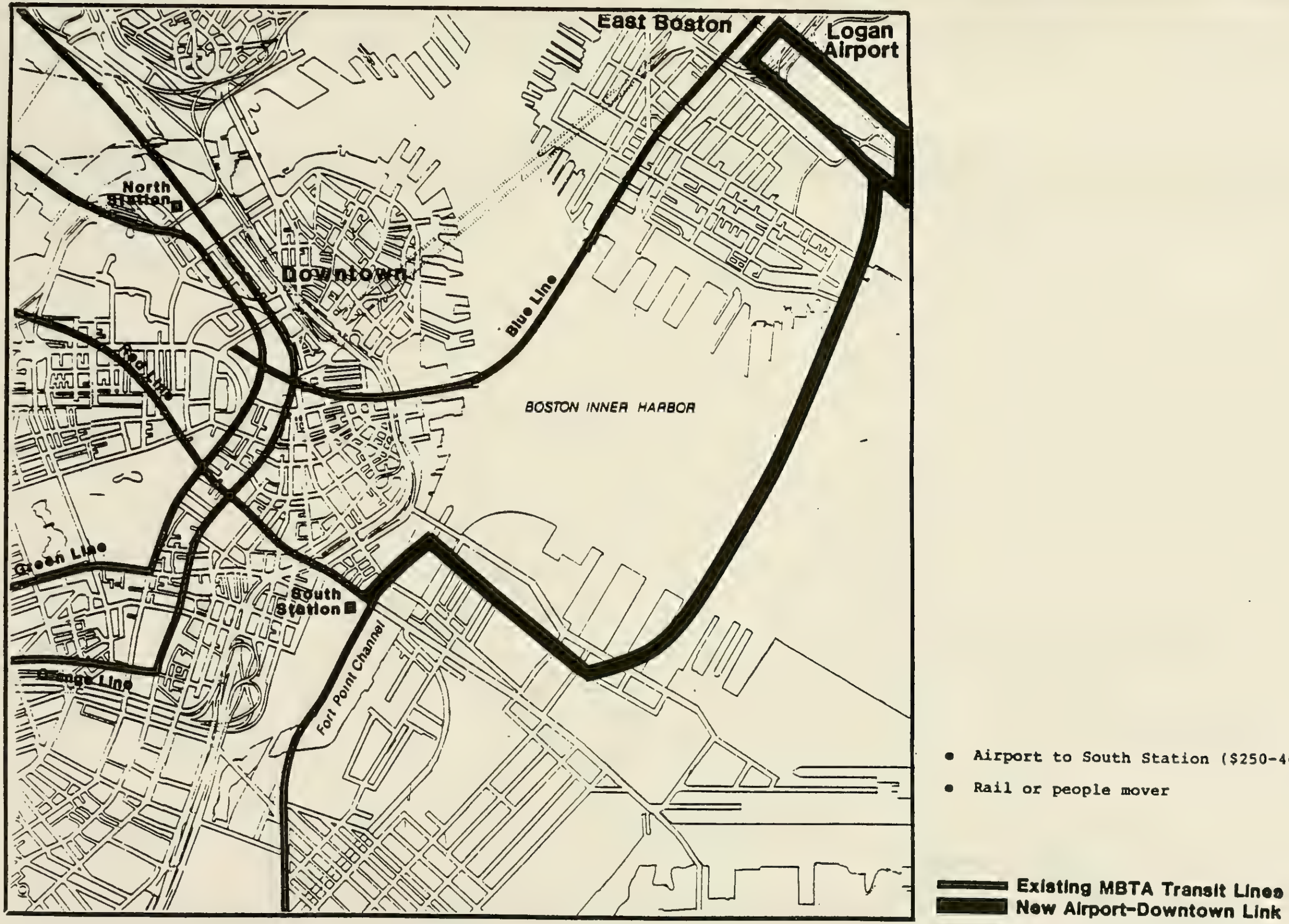
Rail Cut / Parking Link

Possible inclusion of link to South Station

Existing MBTA Transit Lines

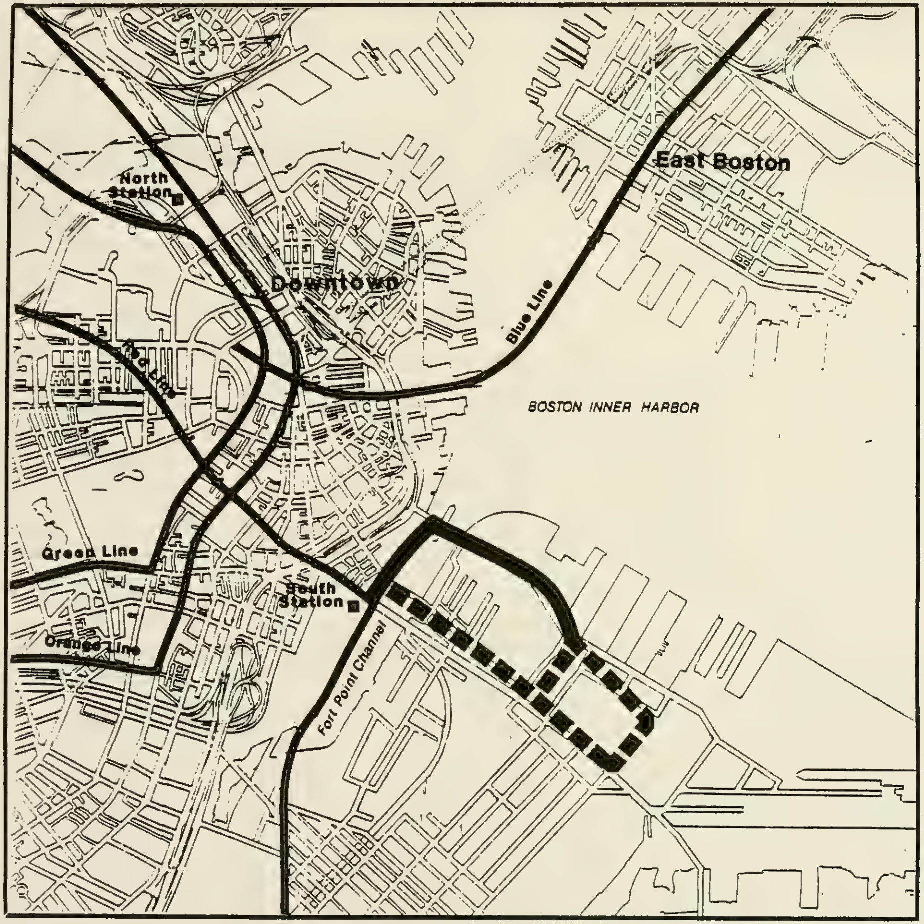
(P) Remote parking near x-way ramps with easy transfer to a people mover

RAIL CUT/ PARKING LINK



NEW AIRPORT-DOWNTOWN LINK

- Airport to South Station ($250-400 million)
- Rail or people mover



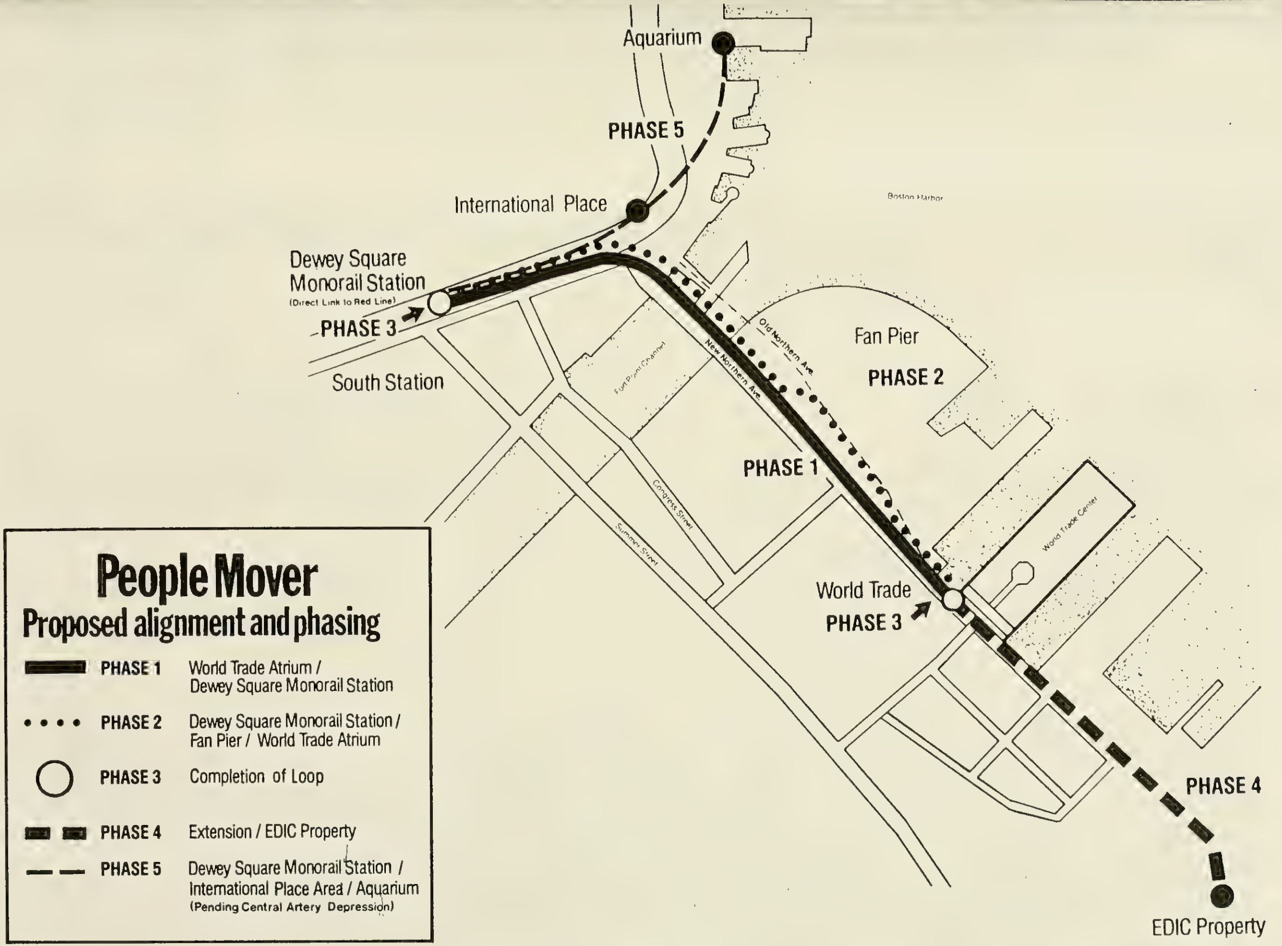
FORT POINT CHANNEL SHUTTLE/LOOP

- Simple 0.9 mile shuttle can be built quickly, privately ($15-30 million)
- 2.2-mile loop can be extended in stages, one-way or two-way
- People mover

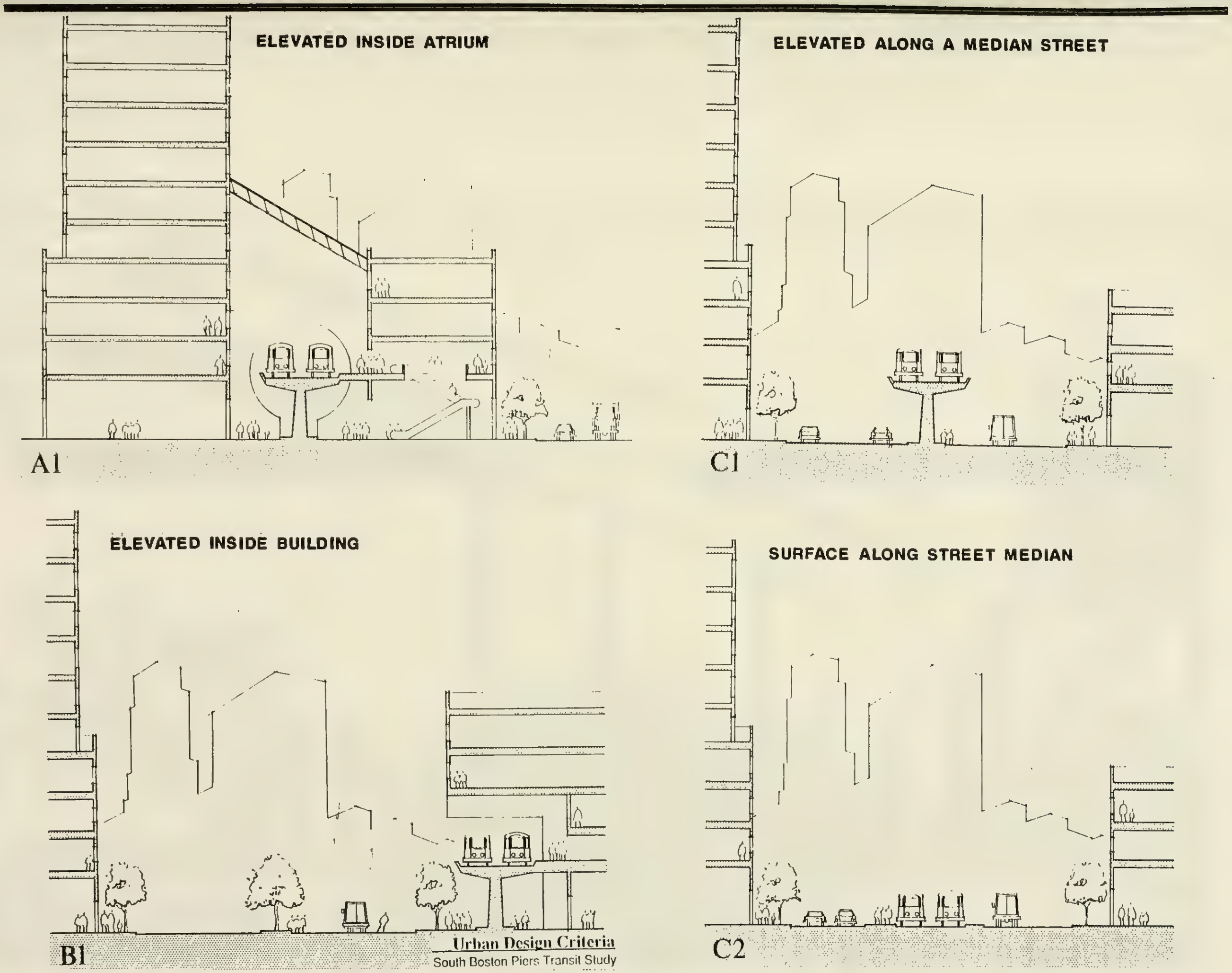
Initial Shuttle / Loop
Loop Extension
Existing MBTA Transit Lines

People mover

The developers of the World Trade Center Expansion (1.4M square feet of office and exhibition space) are proposing a "People Mover" that would connect the World Trade Center/Commonwealth Pier with South Station. This proposal is consistent with the "Fort Point Channel Shuttle/Loop" concept shown in previous page. The U.S. Transportation Secretary announced the commitment of up to $800,000 in Federal funds for a feasibility study of the People Mover called "Boston Seaport Monorail", project pending the satisfactory conclusion of a $200,000 state funding study by the Massachusetts Bay Transit Authority. The people mover as contemplated by the World Trade Center developers would take the form of a monorail, or generically, an elevated light rail transportation system. Similar systems are currently serving airports in Orlando, Las Vegas, and Gatwick, England. UMTA (Urban Mass Transportation Administration) views this Boston project as an outstanding urban transportation demonstration model of solving urban transportation problems, bringing the Federal, State and city governments together with primary urban developers of this area.



PROPOSED PEOPLE MOVER

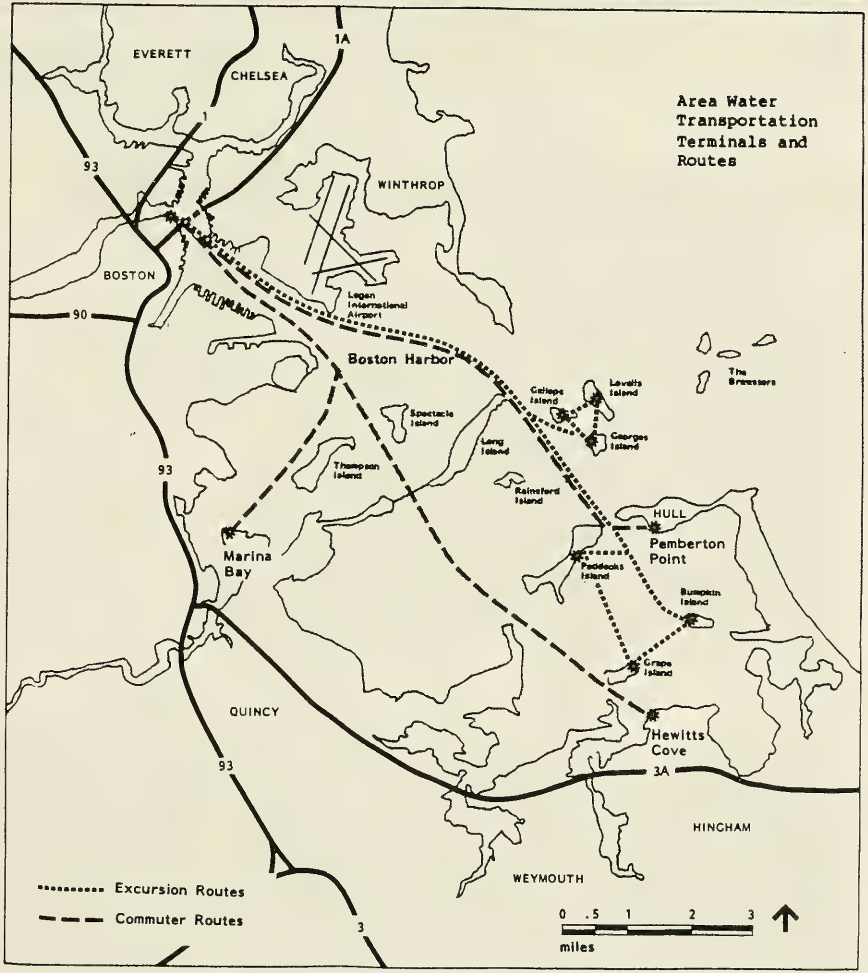


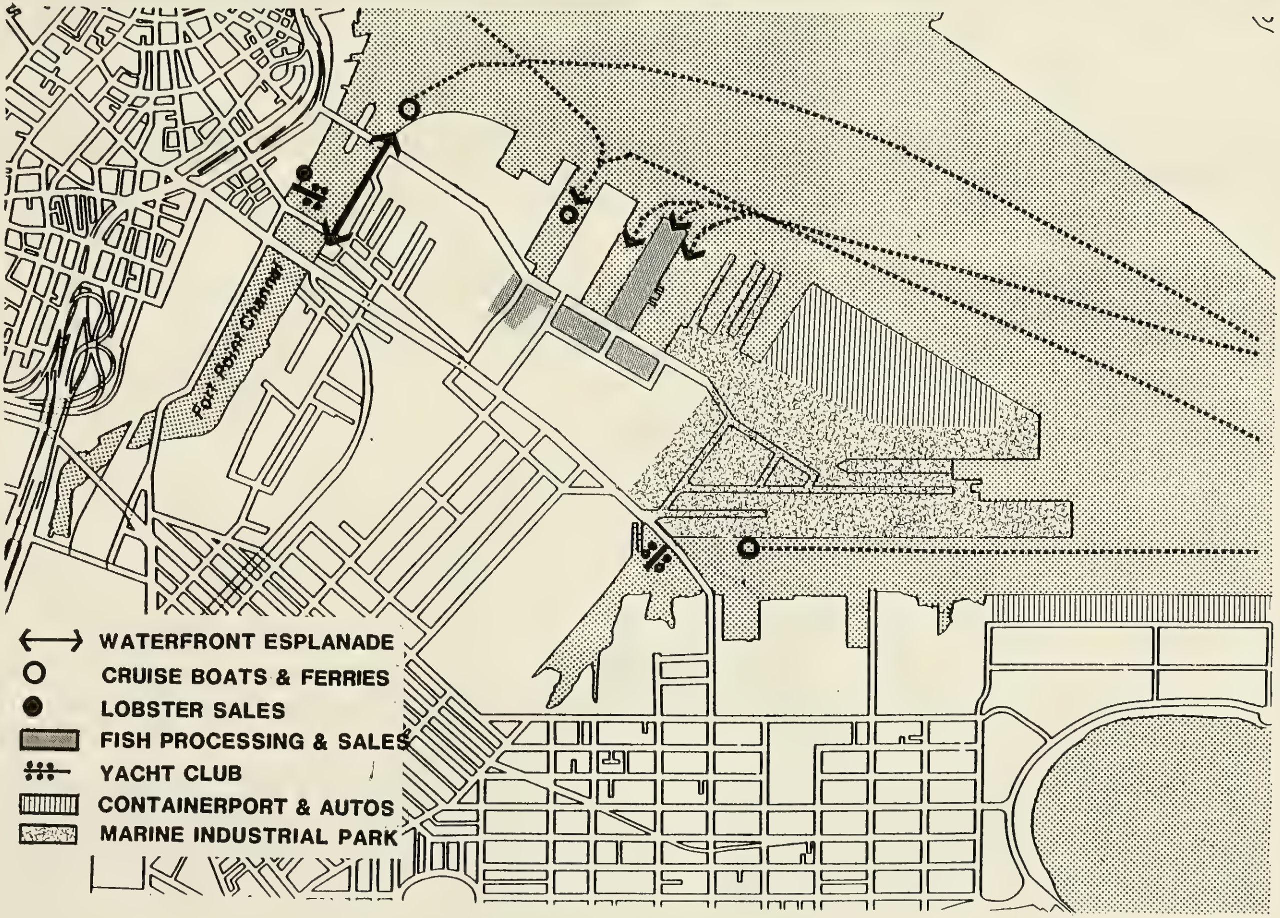
TYPES OF PEOPLE MOVER VERTICAL LOCATION

IMAGE OF WALT DISNEY MONORAIL

5.0
WATER RELATED USES/TRANSPORTATION

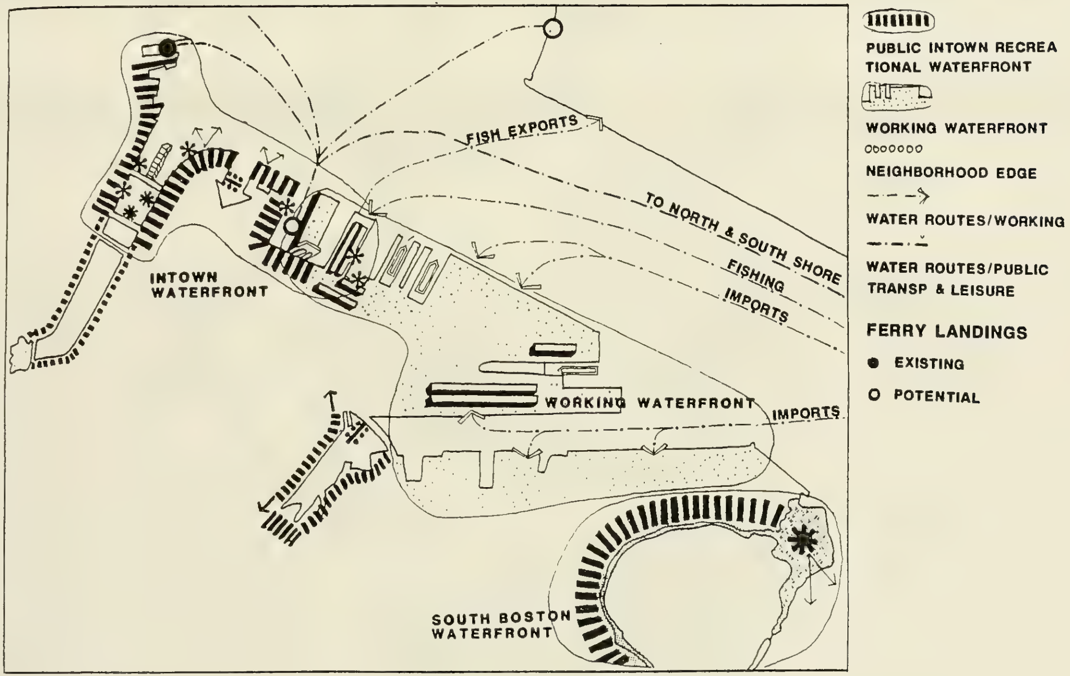
5.1 EXISTING CONDITIONS





WATER RELATED USES

5.2 WATER TRANSPORTATION EXPANSION

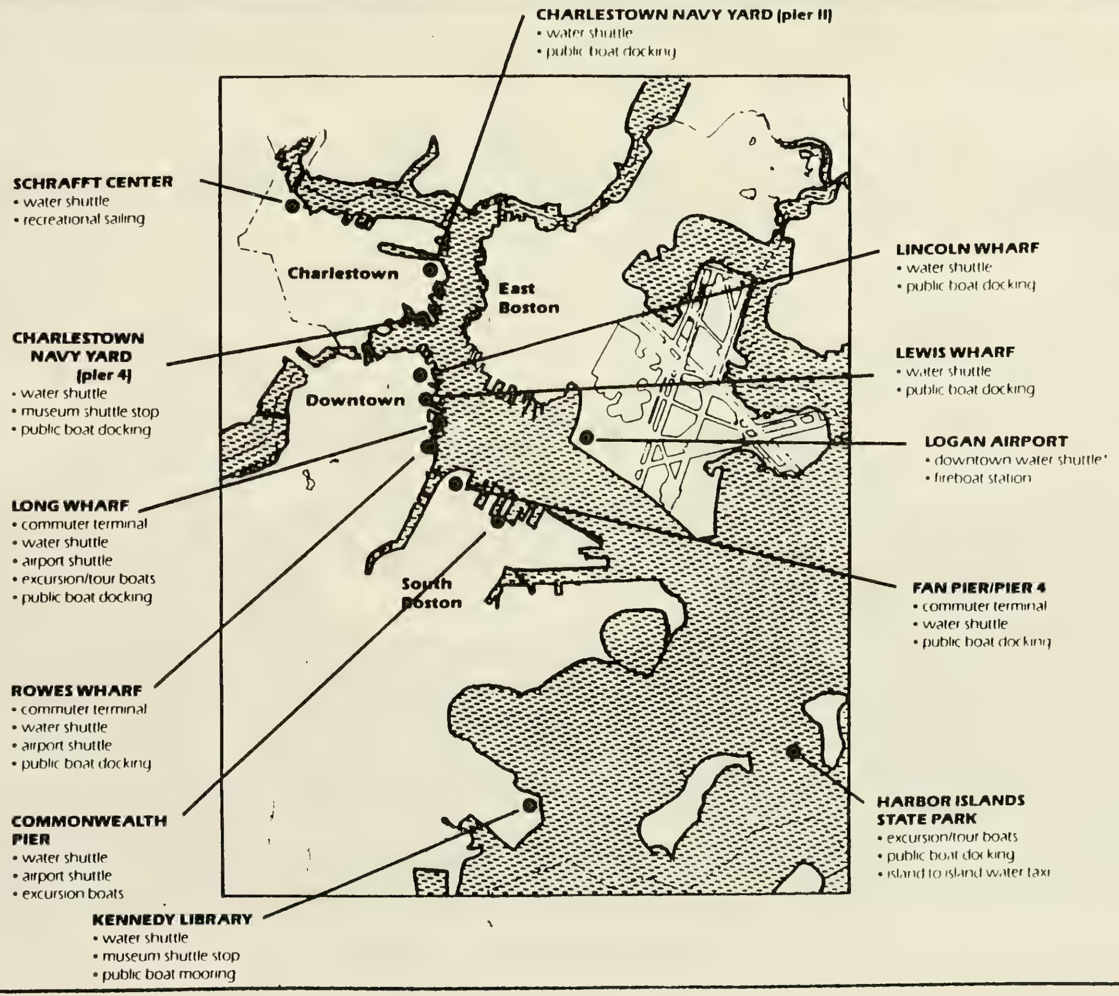


Proposed Uses/Goals

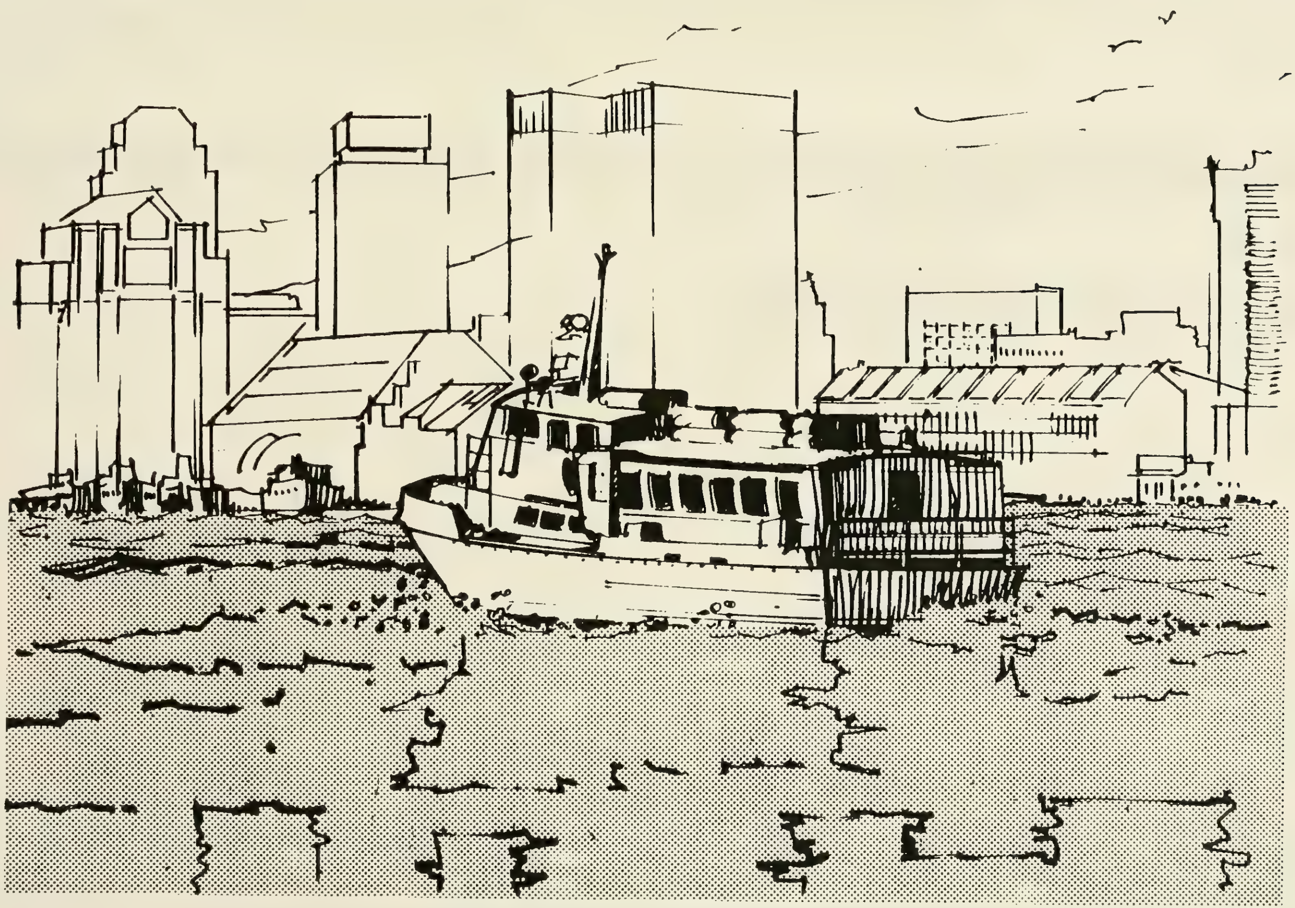
- Preserve working waterfront from the Fish Pier to the Southern border of the Reserved Channel
- Guarantee and enhance public access to water's edge in all non-working areas. Of special importance is the creation of activities along the Harborwalk.
- Extend intown waterfront (Harborwalk) to Fan Pier, Pier IV and World Trade Center. Future extension of Harborwalk along the Fort Point Channel to Gillette and Fourth Street Bridge.
- Open space/recreational uses at the end of both channels to create major public open spaces.

Water Transportation

- Fan Pier/Pier 4 to provide a commuter terminal, a water shuttle terminal, public boat docking and marina
- Commonwealth Pier (World Trade Center) to provide water shuttle, airport shuttle and excursion boats. Large ocean liners could also dock at the pier.
- Take full advantage of the Black Falcon terminal at the Marine Industrial Park.



PLACE IN THE HARBOR


WATER TRANSPORTATION

6.0 IMPLEMENTATION

Given the substantial amount of proposed development, the magnitude of public improvements, the new development trends of the area towards commercial and residential uses and the traffic to be generated from all these new activities is that an area-wide planning effort has been undertaken.

IMPLEMENTATION MECHANISMS

The area-wide planning effort will streamline the process for coordinating all public (i.e., Third Harbor Tunnel, By-Pass Road, MassPort, EDIC) and private (i.e., Boston Wharf properties, McCourt's parcel, World Trade Center and Fan Pier/Pier 4) development being planned over the next decade.

A number of implementing mechanisms will be considered to provide the necessary public control including:

6.1 SOUTH BOSTON HARBORFRONT IPOD

In 1984, the Zoning Commission authorized the creation of Interim Planning Overlay Districts (IPOD's) to allow comprehensive planning and rezoning of a neighborhood in keeping with a community's needs. An IPOD provides temporary zoning regulations for an area where the Zoning Commission has determined that current zoning may be inappropriate. These temporary regulations may stay in effect for a maximum of two years; afterwards new zoning may be put in place.

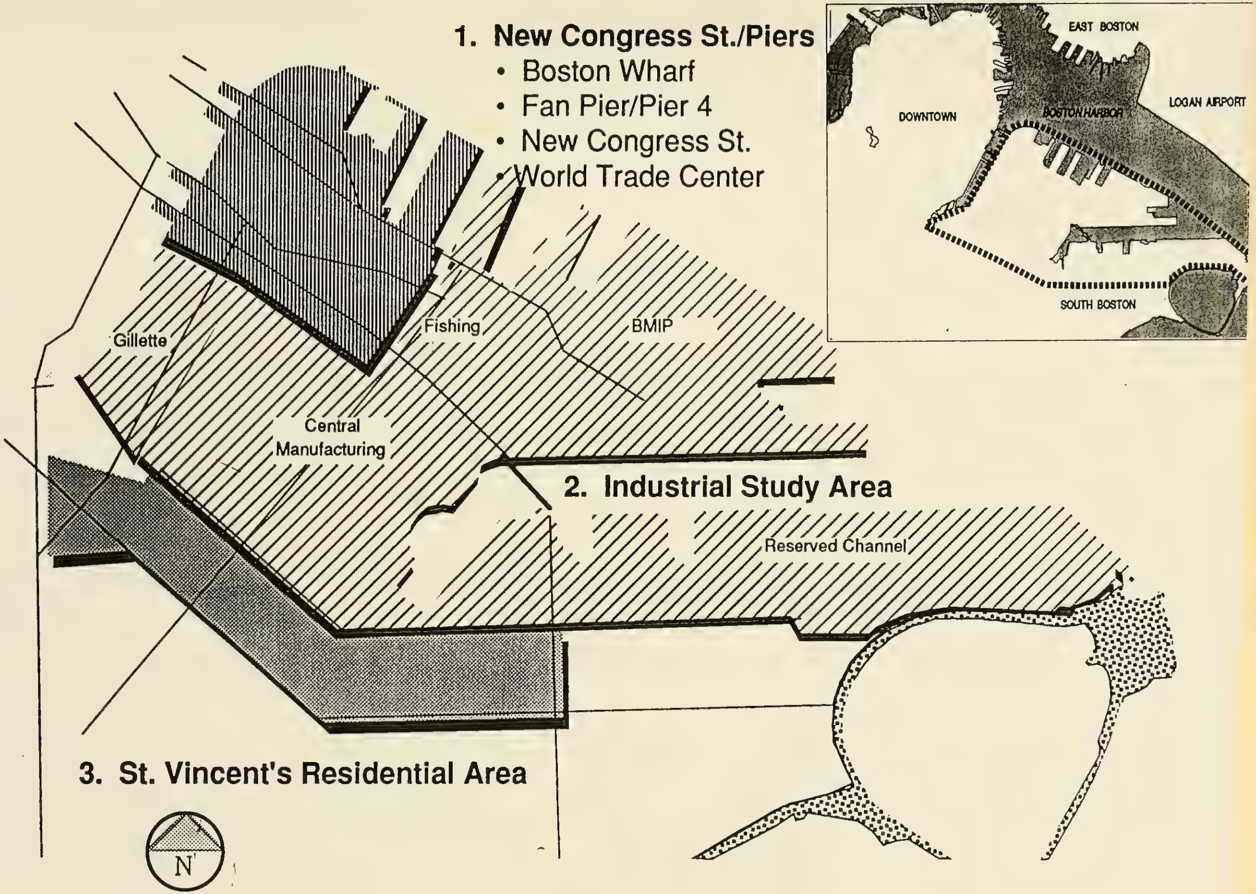
A portion of the Fort Point Channel Study areas along the waterfronts are already subject to the Harborpark Interim Planning Overlay District which was adopted by the Zoning Commission on February 18, 1987. Consideration will be given during the area-wide planning studies to creation of new interim zoning controls to provide protection to these area's while overall planning and more appropriate zoning controls are being completed.

Purpose:

The district is proposed to be established for the following purpose: (1) to analyze existing residential and industrial uses, and to recommend the preservation of these uses when appropriate; (2) to reinforce the South Boston residential area and to minimize infringements from the commercial and industrial areas; (3) to encourage mixed-use development where appropriate, which combines residential and commercial uses; (4) to determine appropriate floor area ratios in order to avoid excessive traffic and parking problems; (5) to determine appropriate height limits, balancing the demands of new development with the existing environment and the requirements for light and air; and, (6) to limit the establishment of off-street parking lots and facilities.

General Area:

the 900-acre area shown in the next page map could become a planning area which could include one or more IPOD'S that would respond to smaller sub-area. One probable subdivision would create a New Congress Street IPOD, a Central Manufacturing area IPOD and a Residential Edge IPOD. Each IPOD could be independent and designed to respond to the specific time frame and needs of each sub-area.



FORT POINT CHANNEL IPOD

The Fort Point Channel IPOD in conjunction with the Harborpark IPOD will cover the entire South Boston Harborfront.

TRANSPORTATION ACCESS PLAN

The Access Plans required by developers of most new projects or substantial renovations commits developers to a monitoring system which will inform the developer and the city of the success in meeting specific transportation objectives to mitigate project impacts over ten or more years. This requirement is a part of the city's Zoning Ordinance.

SATELLITE PARKING FREEZE ORDINANCE

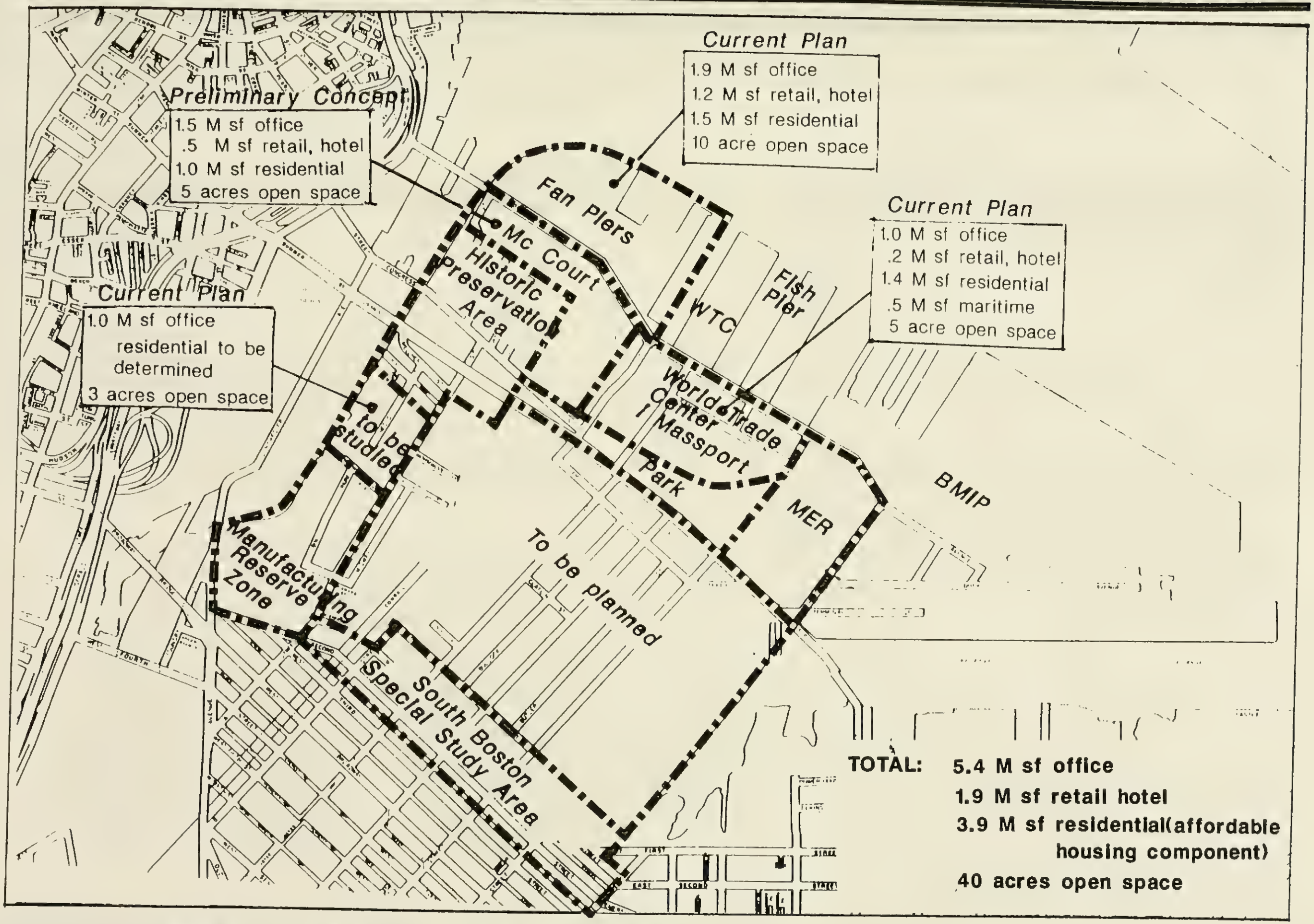
The proliferation of long-term commercial parking in the Fort Point Channel area provides a relief valve to downtown office market needs, but the pressure for use of vacant lots for this purpose will greatly increase with the level of development expected in the Study Area. There is also concern about possible airport related parking with the impacts from the Third Harbor Tunnel and additional ferry service to the airport. For these reasons use of the Satellite Parking Freeze Ordinance would extend public controls over these type of uses.

IMPROVED COMMUNITY REVIEW

While the interim zoning planning process will provide for more director input from the public, community organizations and other interested groups), the Authority will also request Commissioner William Sommers of the Inspectional Services Department to establish an improved permit monitoring in the Fort Point Channel in light of the BRA's new planning efforts in the area. The Authority will request the Commissioner for notification of building permit applications on proposed projects within the Study Area streets.

Decisions affecting the future of the Boston area require the participation of numerous government agencies, diverse interests from the private sector, most of all, the people who live in Boston's neighborhoods. The ultimate success of all the Boston Redevelopment Authority projects is the translation of ideas and plans to reality. Citizen participation is an essential element in this process.

Utilizing existing citizen groups organized to provide guidance to the Authority, there will be three major forums for review of the New Plan. Each of these groups, Fan Pier, Harborpark, and the Downtown Advisory Committee, will play a key role in the process. Fan Pier Advisory Committee is a project review committee and will be primarily concerned with the relationship of this plan to the existing plans for Piers I-IV which are currently under study. The Harborpark Advisory Committee will, with its broad view of all Harborpark development, want to ensure that the plans are consistent with the harborpark guidelines. The Downtown Advisory Committee will



FORT POINT CHANNEL AREA PLAN

want to consider the new plans in conjunction with development elsewhere in the district. The responsibilities of each of these committees is summarized below.

Fan Piers Citizen Advisory Committee

The Fan Piers Citizen Advisory Committee was established by the Authority in early 1985 to provide community input during the design and implementation of the proposed Carpenter-Hyatt and Athanas projects on Piers 1-4 in South Boston. The Committee includes 11 members representing neighborhood interests as well as citywide concerns. The role of this Committee will be expanded to include a review of the proposed Fort Point Channel New Town Plan.

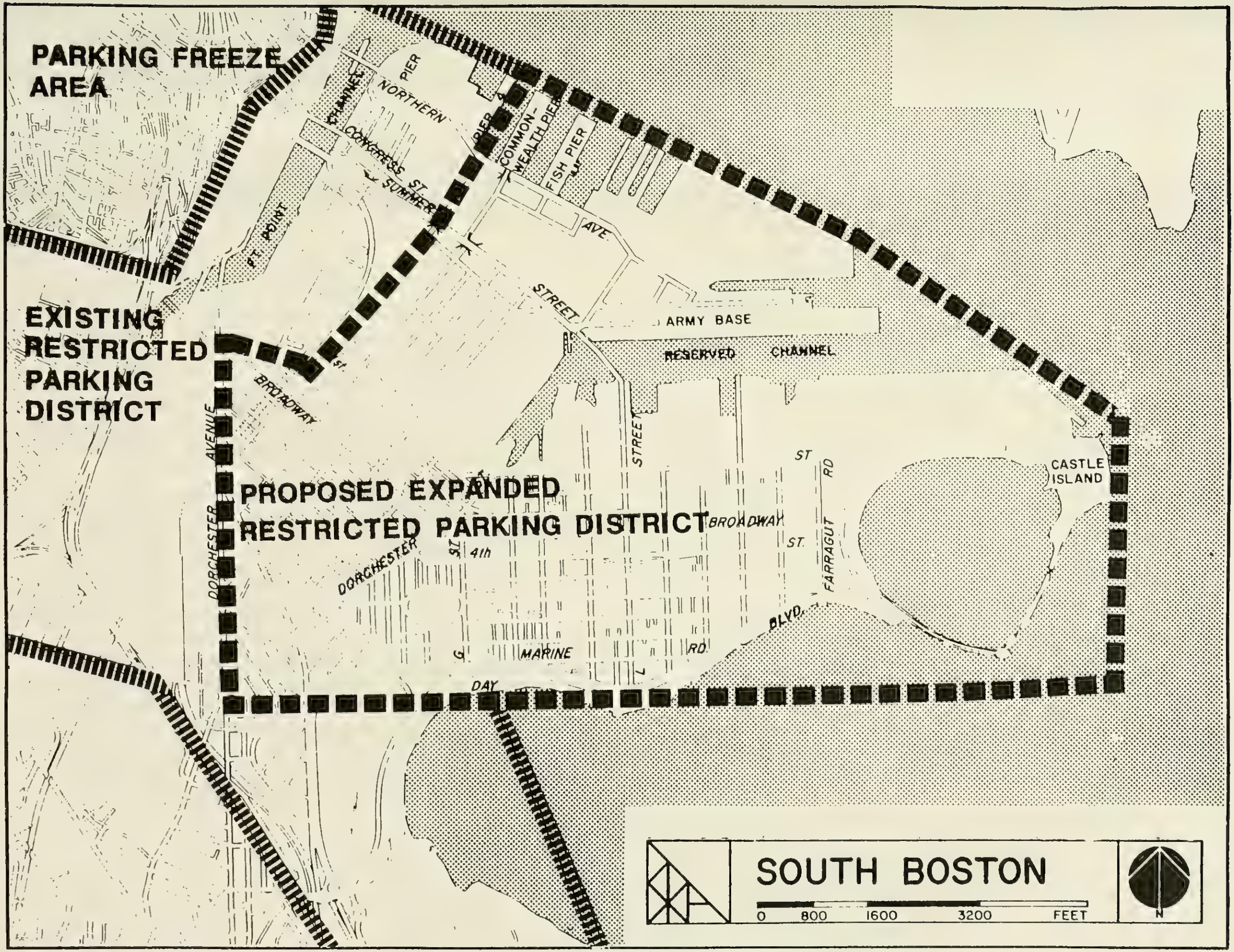
Issues of particular concern to the Fan PAC will be to ensure that there is a balanced mix of uses and the existing building locations, heights and massing, and a system of view corridors and streets reflected the guidelines of the harborpark plan. The plans for Piers 1-4 have been developed to reflect the Harborpark guidelines and will therefore set forth the framework for subsequent development as envisioned by a New Town Plan. As with the Piers I-IV project, the Fan PAC will ensure that the New Town Plans address these concerns.

Harborpark Advisory Committee

The Harborpark Advisory Committee was organized in 1985 by the BRA Director and the Mayor to provide citizen input into all aspects of planning and development along the waterfront. This 15-member Committee consists of residents of neighborhood organizations as well as waterfront interest groups. This Committee with its broad perspective, will provide a valuable input to the New Town Plan.

Downtown Advisory Committee

The New Town Plan is part of the Downtown. Design and development guidelines for the entire downtown are being prepared by the Authority. A citizen review committee will be organized to review these guidelines. This committee will want to review the New Town Plan in the context of these downtown guidelines.



PROPOSED EXPANDED RESTRICTED PARKING DISTRICT

6.2 IMMEDIATE ACTIONS / SPECIAL STUDY AREAS

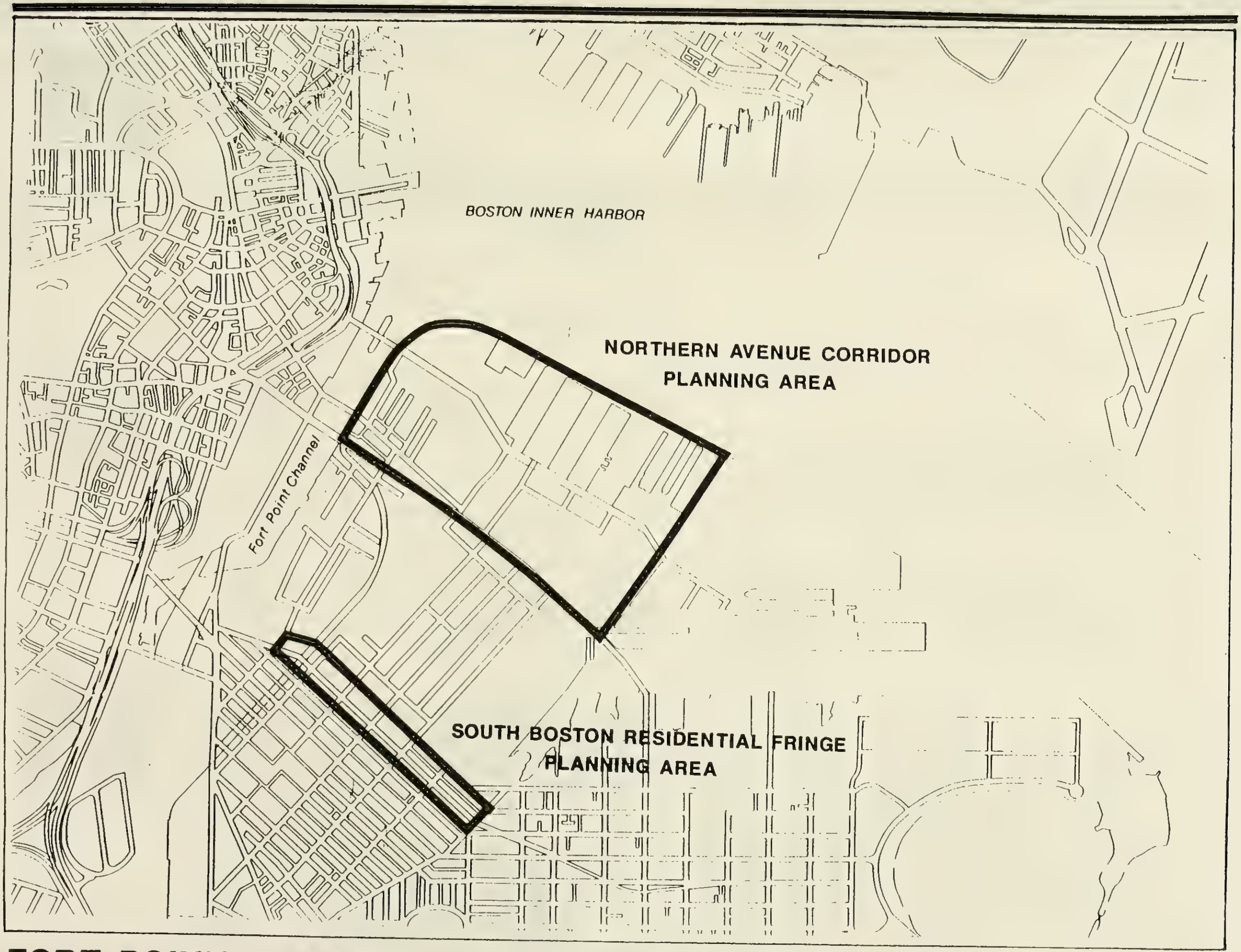
Two initial planning study efforts have been recently initiated by the Boston Redevelopment Authority in the Fort Point Channel Study Area.

- A Northern Avenue Corridor Study is directed at the 150 acre area generally bounded by the Inner Harbor, Fort Point Channel, Summer Street and the Economic Development and Industrial Commission Properties. Its aims are to extend City control over the impacted areas of the Fan pier/Pier 4 Project while strengthening community understanding and participation.

- At the request of the Fan Piers CAC, a South Boston Residential/Impact Area Study has been initiated which will focus on the marginal industrial and commercial uses between Bolton Street and First Avenue from the Gillette Safety Razor Facility to Dorchester Street. This study will be directed to finding solutions to the negative affects of industrial and maritime uses which are adjacent to the residential community and to explore the related issues of truck access and routing as well as reviewing public improvements for this portion of Fort Point Channel.

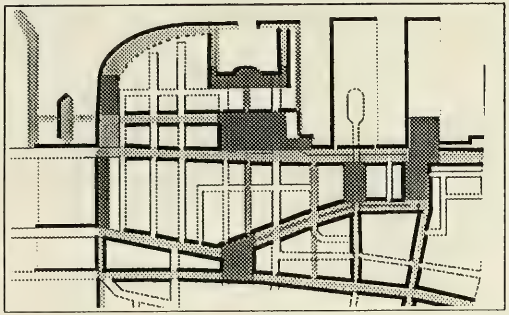
Schedule

It is expected that the two Fort Point Channel Area Studies - Northern Avenue Corridor and South Boston Residential Impact Areas would be in draft form for public review and comment by late summer with the initiation of public implementation control mechanisms (i.e., IPOD's) by late winter 1987-1988.



FORT POINT CHANNEL / PLANNING STUDY AREAS

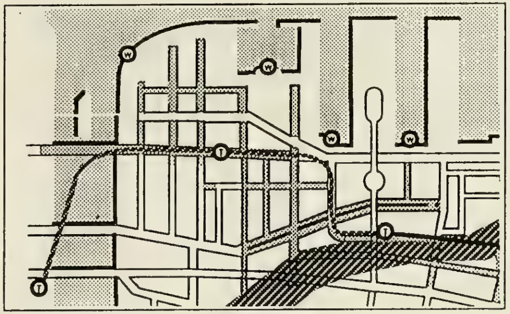
1



Public Open Space System

A coherent system of boulevards, parks, pedestrian ways, and principal open spaces will serve as the focus for the district. The open space system will bind together the different quarters of the district, and connect them to the wider city.

2

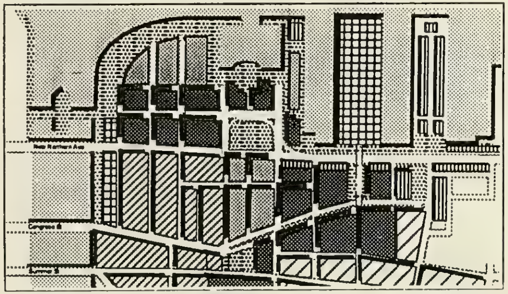


Public Streets and Transit

A new public street network will establish an appropriate "city" scale for the district. The street network will connect the district to the regional highway system, while isolating local residential streets from commuter and truck traffic.

The MBTA's new transitway will provide a direct link to downtown. The below-grade alignment will avoid negative impacts on the surface environment, while highly visible stations will reinforce street-level activity patterns.

3

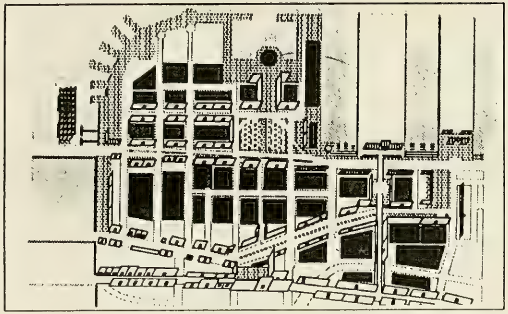


Land Use and Density

Land use and density controls will manage growth, while providing for important public benefits. New development will be concentrated in the New Congress Street and New Northern Avenue corridors. Buffers in use and scale will provide appropriate transitions to adjacent areas -- the historic fabric of the Boston Wharf area; the fishing industry east of D Street; the central manufacturing area south of Summer Street; and the public waterfront created by the extension of the Harborwalk.

PRELIMINARY STUDIES FOR NORTHERN AVE./ NEW CONGRESS ST.

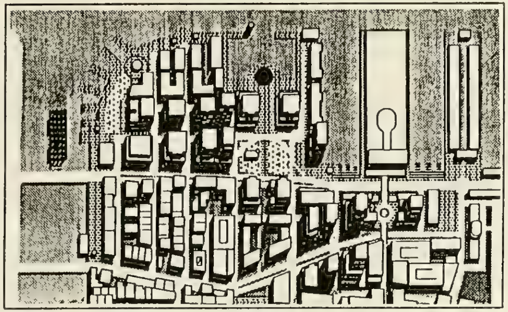
4



Street-level Activities

A continuous zone of street-level retail and major building entrances will enliven the public environment. An internal service zone will be the location for loading docks, parking garage entrances and exits, and other service uses.

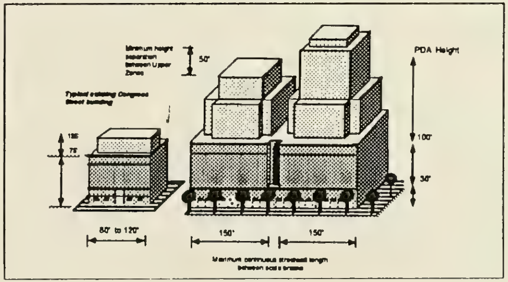
5



Massing, Scale, and Height

Guidelines for new development will help establish the desired character of the public environment. Continuous streetwalls will help define boulevards and major public spaces, at a scale consistent with the Boston Wharf area. Massing and height guidelines will provide for sun, light, and views on public streets and open spaces.

6



Architectural Character

Guidelines for new buildings will ensure that new development is consistent with the desired character of each boulevard, street, and open space in the district. Boulevard buildings will be compatible with the Boston Wharf area in form, scale, and materials. Pedestrian-scaled waterfront buildings will enjoy a greater freedom of form and materials.

David Dixon & Associates
urban design consultant to BRA

7.0 APPENDIX

- BRIDGE STRUCTURES
- COLLAGE VISIONS OF THE FORT POINT CHANNEL
- BIBLIOGRAPHY

Movable Span Bridges Over The Channels

The Fort Point Channel - South Boston Harborfront area has a unique set of moveable span bridges over the Fort Point and Reserved Channels. These bridges extended the road network to South Boston while preserving the heavy traffic of vessels, steamers and sailing boats on the channels.

The bridges changed over the years in location and type. Today only seven remain, and of those the Dover/West Fourth Street simple drawbridge only preserves its fixed position. The six remaining bridges are still complete but four of them have been fixed so as to ease the car and truck traffic over the channels. They are:

- The Broadway Bridge, Old Colony railroad bridge, Congress Street bridge and Summer Street Bridge over the Fort Point Channel.
- The Old Northern Avenue Bridge over the Fort Point Channel and the Summer Street - L Street bridge over the Reserved Channel which are still movable.

The South Boston Harborfront outstands not only by having a large amount of movable span bridges but also because of the engineering quality and diversity of these bridges. They not only represent three different types of movable span bridges, but also represent variations and subtypes. All bridges are different, thereby presenting a unique opportunity for having such a rich variety of bridges in a single area.

Movable Span Bridge Types

Moveable bridges are often used for bridges and highways to accommodate navigation traffic in the waterways crossed. The three types which are found in the Fort Point Channel are:

A swing bridge consists of a super structure arranged to turn about the vertical axis of a pivot anchored to the center pier. Usually the pivot is at the center of a span of two equal arms which balance each other when the bridge is open thus providing two equal openings for navigation. There are three types of swing bridges: center bearing, the entire weight of the open span being supported by the center pivot; rim bearing, the weight being carried by a cylindrical drum, supported by rollers when the span is open; and a combination of these two.

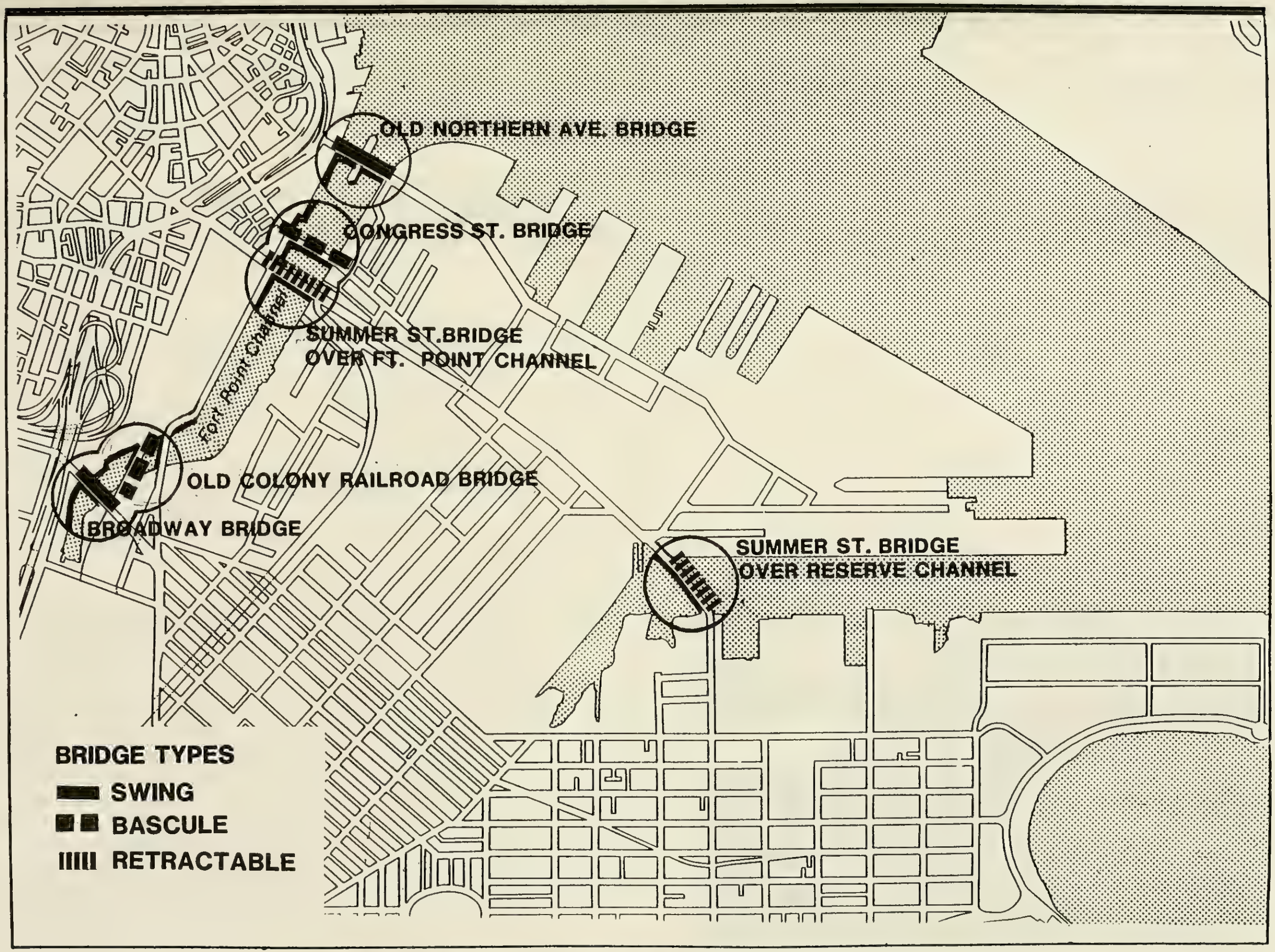
Bascule bridge - are those in which one end rises as the other falls, but the term is commonly applied to any type moving about a horizontal axis, either fixed or moving, as well as to those that roll back on a circular segment. They may consist of a single leaf spanning the channel or of two symmetrical leaves meeting at its center. In the latter case the ends that meet must be locked together, to insure the same end deflection of each leaf, when loaded.

Retractile or traversing bridges, moving horizontally. When closed they form simple spans across the channels. Some telescope inside of the adjoining spans; others recede above the approaches in some cases the approach span is first moved aside, transversely, to permit the draw span to recede in its place. Sometimes the bridge moves back diagonally, as in the spans of Summer Street over the Fort Point and L Street Channels. The large amounts of power and time required have tended to make retractiles obsolete.

FORT POINT CHANNEL & BRIDGES

MOVABLE SPAN BRIDGES

TYPE	LOCATION	DESCRIPTION	CURRENT STATUS
SWING	A. OLD NORTHERN AVE.	Pivotal lift, rim bearing type of swing bridge of steel and concrete 283' spans made up of two 125' long spaces supported on four central tower posts of the inside of four sets of pin connected trusses. These posts carry load to a circular drum, 40' in diameter which in turn is supported by 56 steel wheels running on a track along the rim of the granite island pier. Power to operate drum provided by compressed air from two air compressors which generate nominal pressure of 200 L.C./sq. inch. This pressure used to operate eight end lifts (one at free end of each truss) while a reduced pressure of 70 lbs. is delivered to two independent rack and pinion movements attached to the track of the draw pier.	Scheduled to be replaced by new Northern Avenue Bridge Eligible for National Register. To be preserved in open position.
	B. BROADWAY	Superstructure consists of two riveted L.C. trusses on either side of roadway. The 800T weight of the draw is carried by a phosphor bronze disc, 26" in diameter placed between two hardened steel discs. Six trucks, running on a track 40' in diameter, keep draw balanced. Track is supported on circular steel drum. Two 20 hp. electric motors on underside of draw engage a rack on drum to turn the span. 210' long by 60' wide swing bridge of center bearing type, supported on underside circular steel drum, two moors on underside of draw engage a rack on the drum to turn span.	Sufficiency rating 35.2 Design-$160K-'85 Construction $600K-'88 Removal for 3rd Harbor
BASCULE	A. OLD COLONY	A scherzer rolling-lift bascule drawbridge. The leaf moves back as it rises on large rockers. Each leaf worked by 50 hp motor on platform 30' above tracks through a rack and pinion arrangement, each motor drove 60' (operating strut) back and forth, raising or lowering leaf through a pin connection at top end of truss. 30 seconds required to open or close. Each 500T draw span could be raised and lowered independently as is revolved 80° in a vertical plan. The rolling segment at the heel of each truss is an 80° segment of a circle 52' in diameter. Shoe plates attached to the segment have rectangular holes through them to engage teeth cast on the top of the horizontal track plates. These prevent span from slipping and act as guides when the span is being revolved. Three double-tracks through riveted truss spaces. Bridge is skewed to direction 42' channel; the trusses range from 83' to 113'.	Removal for 3rd Harbor
	B. CONGRESS ST.	Single leaf electric bascule bridge. Counter weight still in place. Elegant light standards.	Bridge has been fixed. Posted for weight restrictions 14T X 2 axles 20T X 3 axles Sufficiency rating-54.4 Design $165K-'85 Construction $635K-'86
RETRACT-IBLE	A. SUMMER ST. OVER FT. PT. CH.	Retractible draw whose moving span is pulled diagonally away from the fixed shore space on several sets of rails. King-post truss arrangement of the superstructure. When draw is opened, the front ends of the cantilevered channel span are carried by suspension rods passing over Sanson posts erected at middle of span and then back to rear end of span. Bridge is 60' wide between railings. Drawway is 40' in width. Steampower originally used to operate. Later was electrified.	Motors removed in 1957 Deck needs replaced; stringers to be added to each bay Sufficiency rating-55.6 Design-$335K-'85 Construction $1,500,000-'87
	B. SUMMER ST. OVER RESERVE CH.	Double retractable bridge. Parallel spans pull away from center in opposite directions. Electric draw operated from small office on S.W. side of bridge.	Additional stringers needed



MOVABLE SPAN BRIDGES OVER CHANNELS

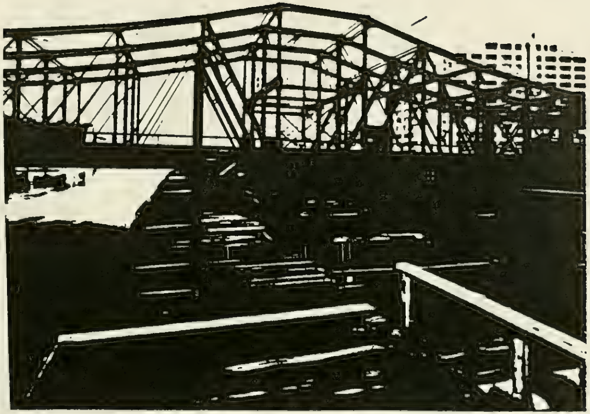
Northern Avenue Bridge

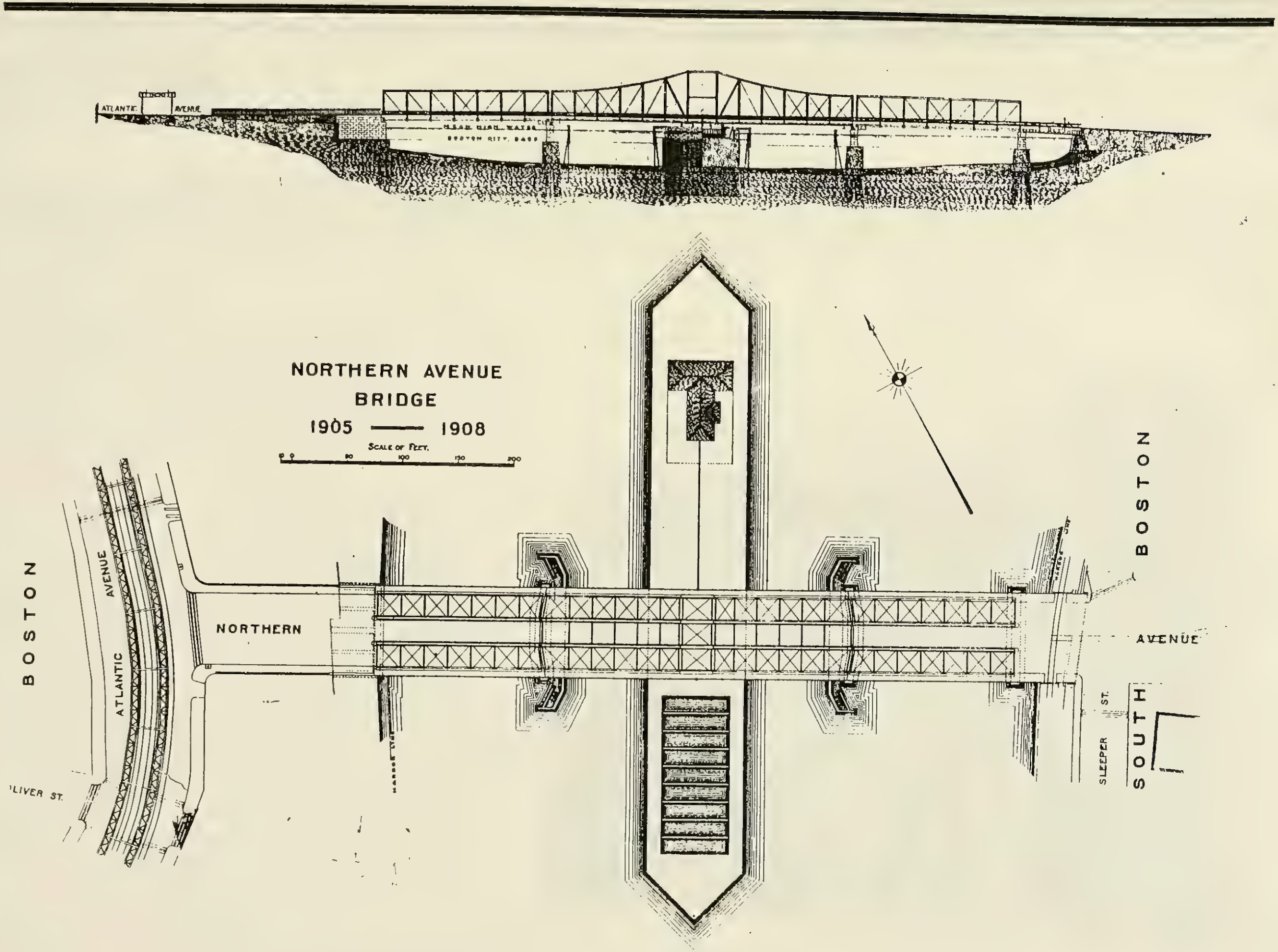
Rim Bearing Swing Type

The Northern Avenue Bridge which is still operated infrequently on its original compressed air system, is one of three surviving swing bridges in Boston.

The bridge was the result of nearly 40 years of negotiations between the Commonwealth, which planned the development of the South Boston Flats; the New York and New England Railroad, which constructed an ocean freight terminal and railroad yards in the vicinity in 1880; the Boston Wharf Company; and the City of Boston. With the construction of the original Commonwealth Pier between 1897 and 1903, the case for the bridge became paramount, culminating in a mandatory act of the legislature passed in May 1903, directing the city to construct the bridge.

Work was begun on the piers and abutments of the bridge in September 1905, and the bridge was so far completed as to be opened for traffic October 1908. The bridge is 80 feet in width, encompassing between four sets of pin-connected trusses, two sidewalks, two roadways, and a center lane reserved for a double-track freight railroad. The swing span, 283 feet in length, is made long, supported on the four central tower posts of the inside trusses. These posts carry the load to a circular drum, 40 feet in diameter, which in turn is supported by 56 steel wheels running on a track along the rim of the Granite Island Pier.





NORTHERN AVENUE
BRIDGE
1905 —— 1908
SCALE OF FEET.
0
50
100
150
200
ATLANTIC
AVENUE
MEAN HIGH WATER
BOSTON CITY BASE
BOSTON
ATLANTIC
AVENUE
NORTHERN
OLIVER ST.
BOSTON
AVENUE
SLEEPER
ST.
SOUTH

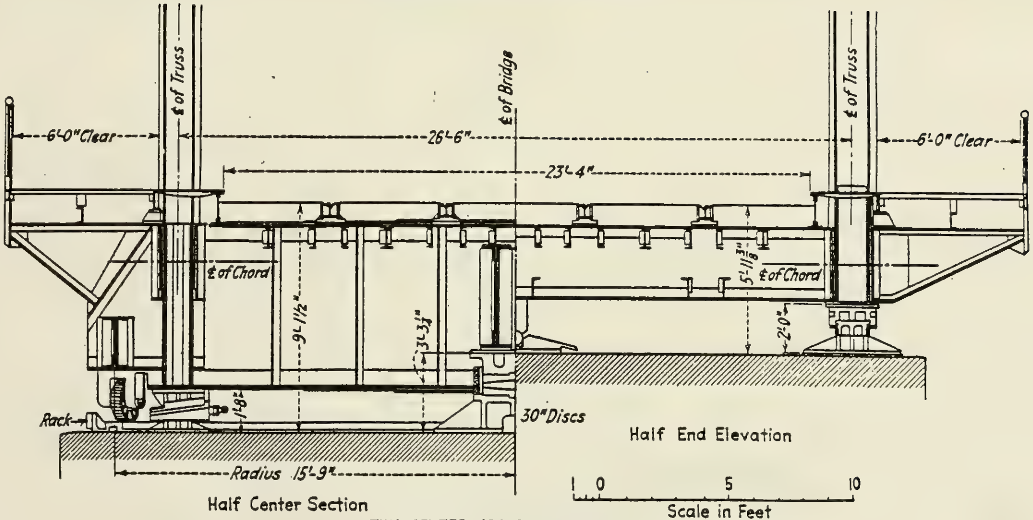
Broadway Bridge

Center Bearing Swing Type

The original Broadway Bridge over the channel was constructed by the Moseley Iron Bridge Company of Hyde Park. Its drawspan, one of five sections in the 1,100 foot structure, was supported by sixteen iron screw piles. Within a year of the Bridge's completion, the screw piles settled unevenly, causing distortion and disarrangement of the entire Bridge. After the failure of the Moseley Company and the appointment of a new Chief City Engineer; a replacement swing span was constructed five years later by the Watson Manufacturing Company of Paterson.

The present span, 210 feet long and 60 feet wide was constructed in 1914 by the Boston Bridge Works. Its super structure consists of two riveted trusses on either side of a roadway designed for two lanes of team travel and two tracks for the surface cars of the Boston Elevated Railway. The weight of the Bridge's 800 ton draw is carried by a phosphor bronze disc, 26 inches in diameter, placed between two hardened steel discs. Six trucks, running on a track 40 feet in diameter, keep the draw balanced, and the track in turn is supported on a circular steel drum of similar diameter. Two 20 h.p. electric motors on the underside of the draw engaged a rack on the drum in order to turn the span, exposing a 50' navigable channel.

CENTER-BEARING HIGHWAY SWING SPAN.



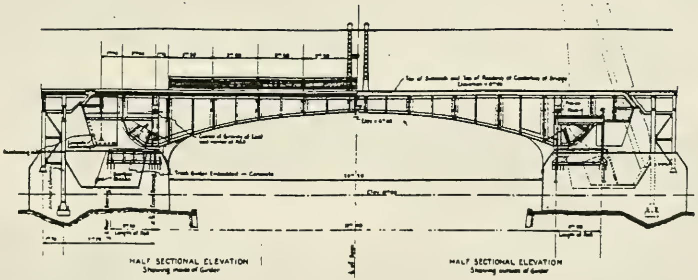
TWO CENTER CROSS GIRDERS

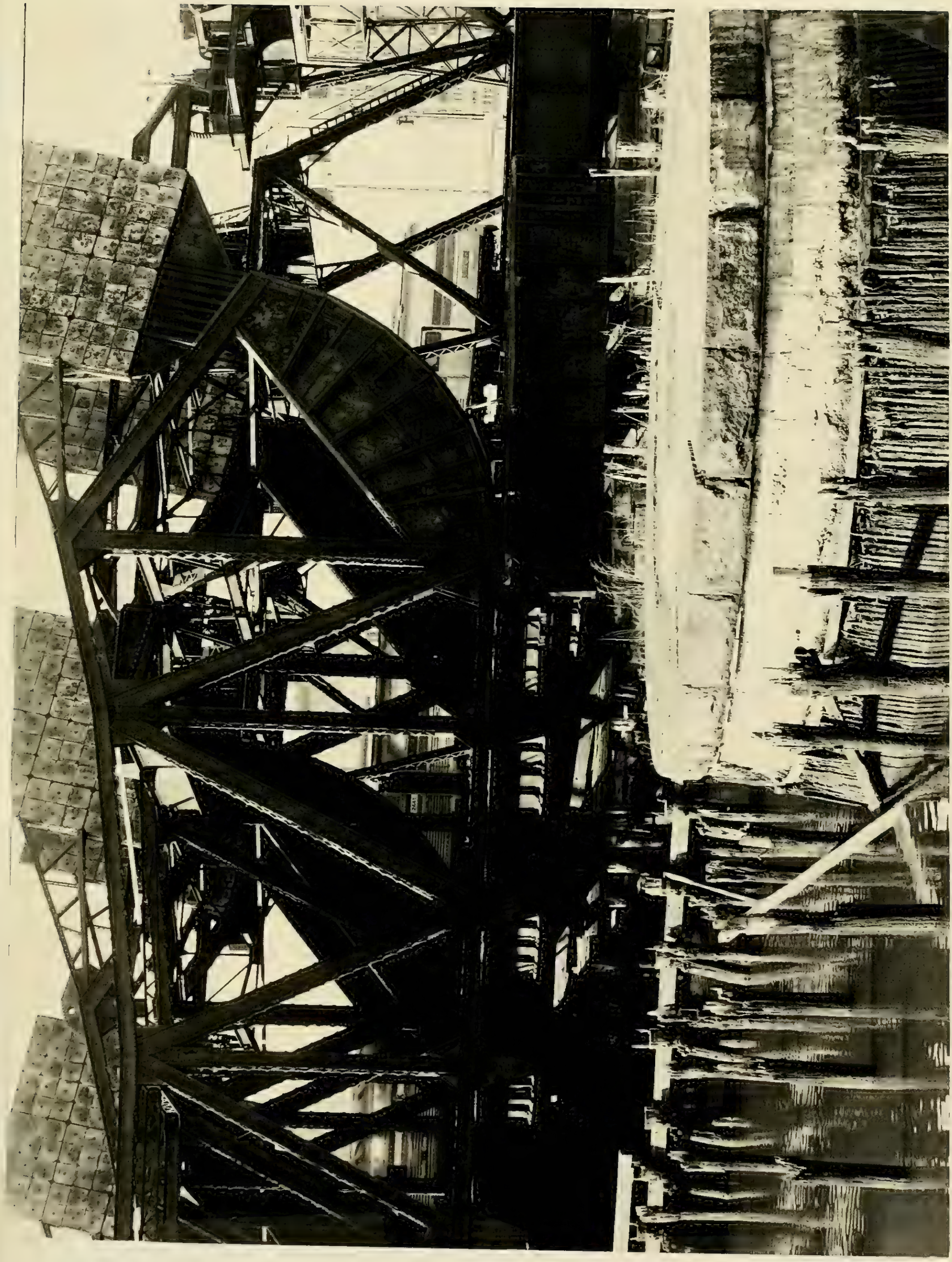
Old Colony Railroad Bridge

Scherzer Rolling Lift Baseline Type

From the Summer Street alignment, the new arrangement at South Station moved the railroad's crossing of Fort Point Channel 900 yards to the south, where it paralleled the route of the Old Colony Railroad. Here, a new six-track moveable bridge was built to carry both lines. It was a Scherzer rolling light bascule type whose leaf moves back as it rises on large rockers.

The six-track bridge is made up of three double-track through riveted truss spans. As the bridge is sharply skewed to the direction of the 42-foot channel, the trusses of each span are of unequal length, ranging from 83 to 113 feet. Each draw span, weighing approximately 500 tons, could be raised and lowered independently of the other two and is revolved 80° in a vertical plane. The rolling segment of a circle 52 feet in diameter. Shoe plates attached to the segment have rectangular holes through them to engage teeth cast on the top of the horizontal track plates. These prevent the span from slipping and act as guides when the span is being revolved each leaf was independently worked by a 50 h.p. Westinghouse Railroad-type motor on a platform 30 feet above the level of the tracks. Through a rack and pinion arrangement, each motor drove a 60-foot operating strut back and forth, raising or lowering the leaf through a pin-connection at the top end of the truss. The time required for opening or closing each span was usually 30 seconds.





Congress Street Bridge

Trunnion Bascule Type

The earliest route connecting the Boston Wharf property with downtown Boston was the Congress Street Bridge, erected in 1878. Congress Street, originally Eastern Avenue, was laid out across the mud flats and in 1892 crossed the Reserved Channel on what is today the L Street Bridge. The presence of the railroad yards however, made this route a hazardous one, and in the 1890's as part of the general movement to eliminate grade crossings, Congress Street was terminated at the yards.

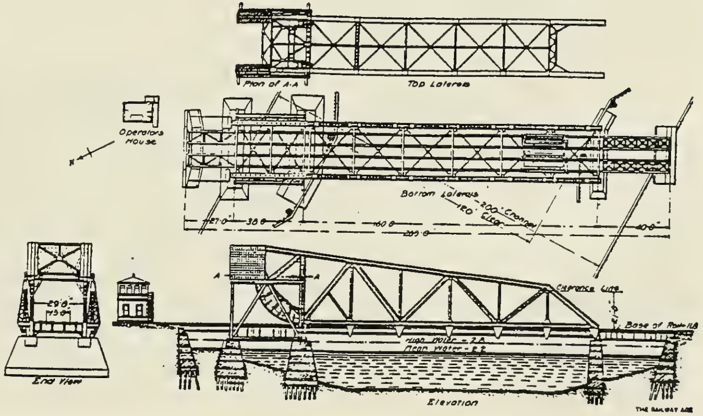
In the meantime, the development of the Boston Wharf property set in motion by the Congress Street Bridge had accelerated. By 1990, a solid wall of masonry lined Congress Street as far as the yards.

"All the great retail firms of this city make this their initial point of receipt, and there in the great warehouses which cover the entire district, are stored temporarily millions of dollars worth of goods." The city engineer went on to report that the Congress Street Bridge was crossed by more teams daily than any other in Boston. Even after the construction of the adjacent Summer Street Bridge in 1901, teams continued to use the Congress Street Bridge because of the easier gradient.

The original Congress Street Bridge, a steam-operated steel swing draw span, was not replaced until 1930, when the present bridge was constructed. The new bascule draw was electrically operated, and furnished a channel 75 feet in width.

The Congress Street Bridge is the most recent of the five movable truss bridges spanning Fort Point Channel. Taken together, the collection forms an extraordinarily rich bridge district, which, for its size, is thought to be unmatched in variety by any other area of the country.

- o Peter Stott, Massachusetts Historical Commission



CONGRESS BRIDGE OVER THE FORT POINT CHANNEL

Summer Street at Fort Point Channel

Retractive Draw Spans Type

Where Summer Street crossed Fort Point Channel, the City erected the Summer Street Bridge, a rectractile draw like that over the Reserved Channel several hundred yards to the east. Like the original 1877 Dover Street retractile (no longer extant), the bridge is a rectractile: the parallel spans pull away from the center in opposite directions.

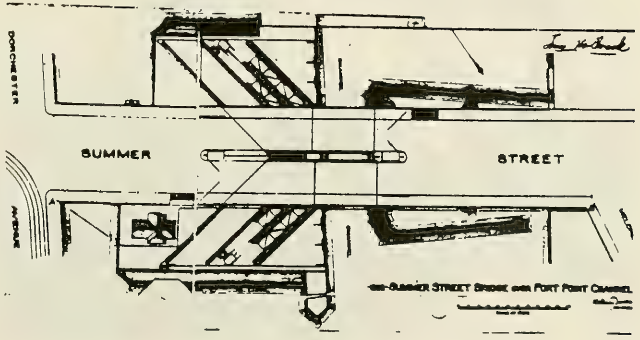
The electrically operated draw was operated from a small office in the southwest side of the bridge. On both sides of the bridge where small roofed waiting areas over the sidewalks where in inclement weather, pedestrians could stand waiting for the draw to close. Both waiting areas and operator's office had gable roofs with medieval-style half-timbering in the gable ends.

The Summer Street alignment had been used since 1855 by the New England Railroad (originally the Midland Railroad) to reach its passenger and freight terminals at what is today Dewey Square. The tracks deadheaded in a passenger terminal at the site of South Station, whose construction in the late 1890's allowed the discontinuance of the railroad's swing bridge over Fort Point Channel and the construction of the present bridge.

The construction of the Summer Street Bridge marked the beginning of an enormous expansion of wool warehouses in the Fort Point Channel area. Previously clustered in the Dewey Square area, after the completion of the bridge, they "moved in columns, as it were across the Channel to take possession of the new buildings erected along the extension of Summer Street on the South Boston side". Principal instigator of the bridge was the Boston Wharf Company's president, Joseph B. Russell.

Today, the draw span motors removed, the bridge no longer functions, and the piles supporting the rectractile rails are deterior-ating. Despite its condition, the bridge, the larger of the two Boston rectractile spans, is one of the key elements in the rich Fort Point Channel Bridge District.

- o Peter Stott, Massachusetts Historical Commission



Summer Street over Reserved Channel

Retractive Draw With King Post Superstructure

The second oldest metal highway bridge in Boston is the L Street Bridge over the Reserved Channel, built to connect South Boston with the Commonwealth's planned improvement of the South Boston flats. Authorized by the legislature in June 1891, the bridge was not completed until late 1892.

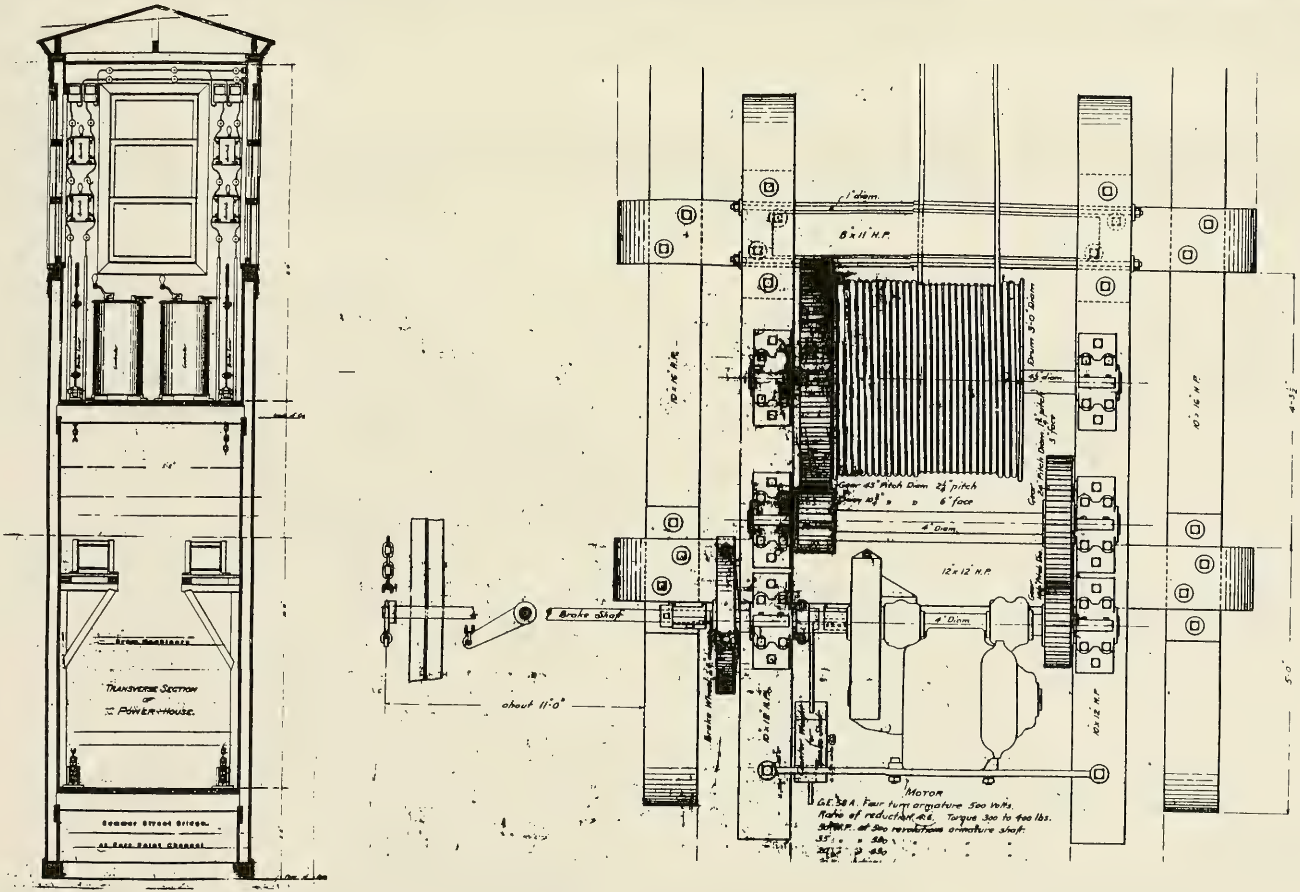
The bridge is a reare moveable type known as a "retractile draw", in which the moving span is pulled diagonally away from the fixed shore spans on several sets of rails. Characteristic of the superstructure is the king-post truss arrangement. When the draw is opened, the front ends of the cantilevered channel span are carried by suspension rods passing over "Samson posts" erected at the middle of the span and then back to the rear end of the span.

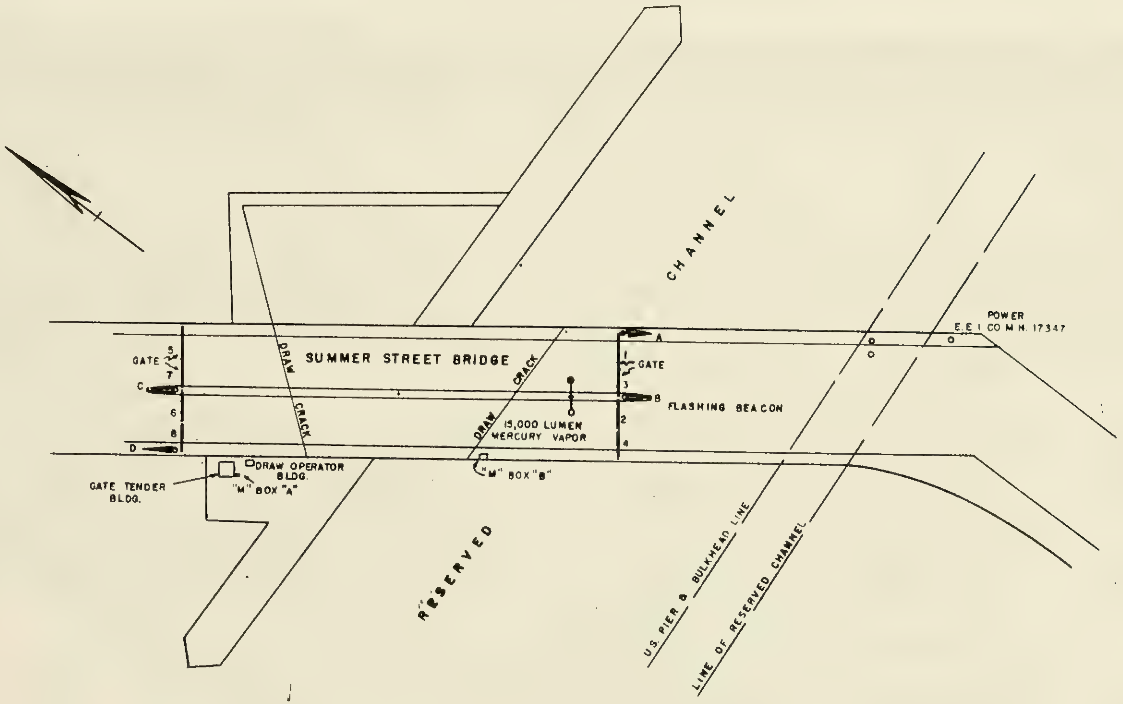
The invention of the rectractile draw has been credited to the engineer, T. Willis Pratt (1812-1875).

The bridge is 60 feet wide between the railings. The drawway itself is 40 feet in width. The contract for building and erecting the draw was made with the King Bridge Company of Cleveland, Ohio, whose identifying bridge plates are still in place. The contract for the rest of the bridge and engine house went to William L. Miller of Boston; the machinery was built by Miller & Shaw of Cambridge; and the trucks were furnished by Charles Carr of Boston.

Steam power was used to operate the L Street span, though it was later electrified. In the course of rehabilitation in 1983, the bridge was made a fixed span by removal of the electric motors.

- Peter Stott, Massachusetts Historical Commission


Transverse Section
of
Power-House.
Summer Street Bridge.
1" diam.
8 x 11 H.P.
Drum 3'-0" Diam
4 3/4" diam.
10 x 16 H.P.
4'-3 1/2"
5'-0"
Gear 45" Pitch Diam 2 1/4" pitch
6" face
4" Diam.
12 x 12 H.P.
Brake Shaft
4" Diam
about 11'-0"
10 x 12 H.P.
10 x 18 H.P.
10 x 16 H.P.
Motor
G.E. 38 A. Four turn armature 500 volts.
Torque 300 to 400 lbs.


CHANNEL
RESERVED
SUMMER STREET BRIDGE
DRAW
CRACK
DRAW
CRACK
GATE
GATE
A
B
C
D
1
2
3
4
5
6
7
8
FLASHING BEACON
15,000 LUMEN
MERCURY VAPOR
POWER
E.E.I CO M.H. 17347
"M" BOX "B"
"M" BOX "A"
DRAW OPERATOR
BLDG.
GATE TENDER
BLDG.
U.S. PIER & BULKHEAD LINE
LINE OF RESERVED CHANNEL

PROPOSED BRIDGE NETWORK

Preservation of Existing Structures

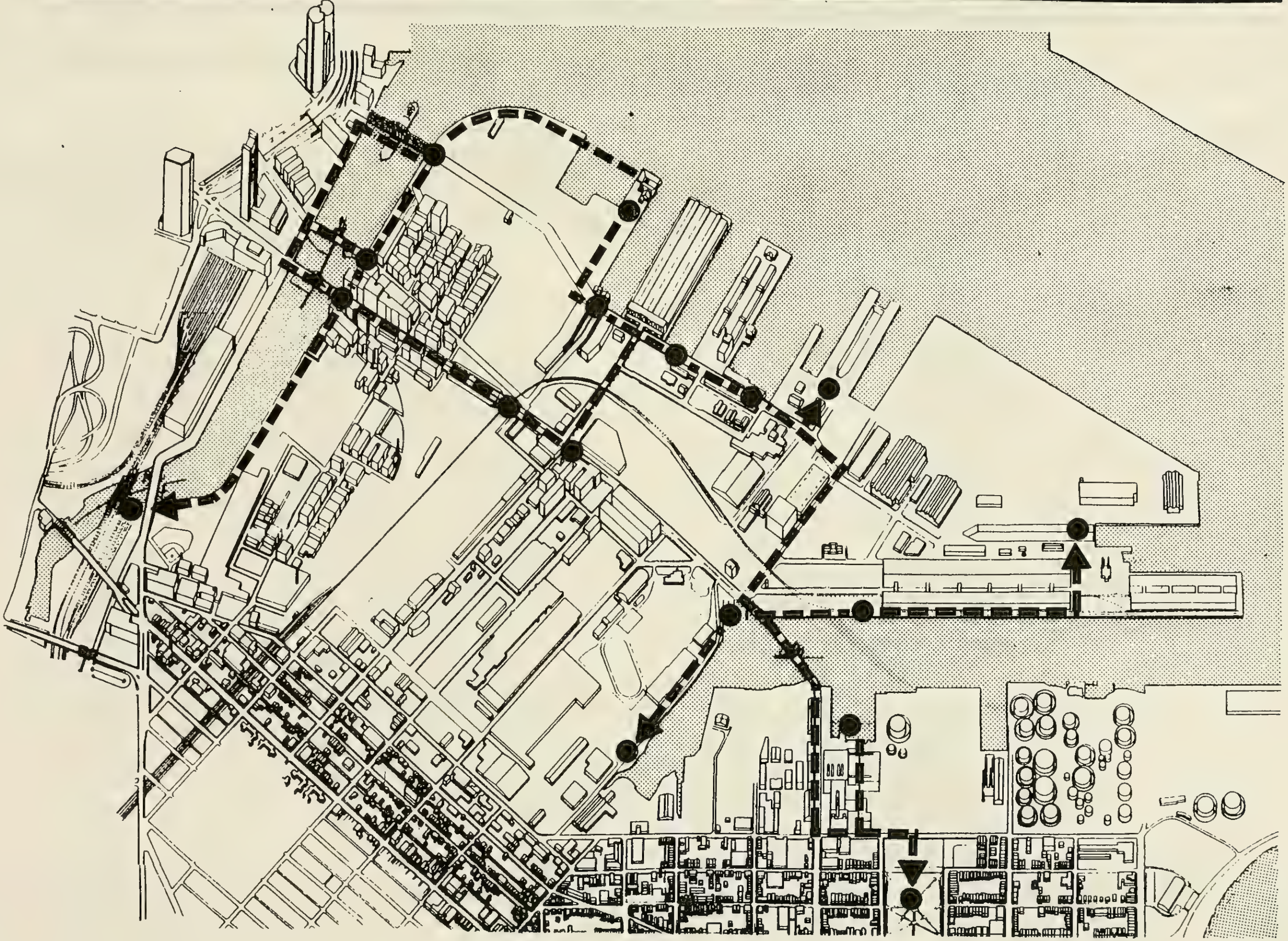
The existing bridges should be repaired and preserved, and any new bridge should provide the same structural variety and richness that characterizes the existing bridges in the area. Under no circumstances should any of the existing bridge be deprived of any of its original structural elements. This refers especially to the piles on both channels which after the bridges were fixed, went into disrepair and disuse. To provide an accurate image of how the movable span bridges worked while active is that the no longer used waterfronts have to be preserved as an integral part of the bridges.

Bridge Trial and Museum

There are enough bridges to form a "Museum of Bridges" in the South Boston Harborfront. A walk that connects all the different bridges and to provide with public open spaces and amenities is encouraged. The Harborwalk described in the Open Space chapter of Section II, could do the role of integrating and celebrating the bridges.

STATUS ON FORT POINT CHANNEL/SOUTH BOSTON BRIDGES

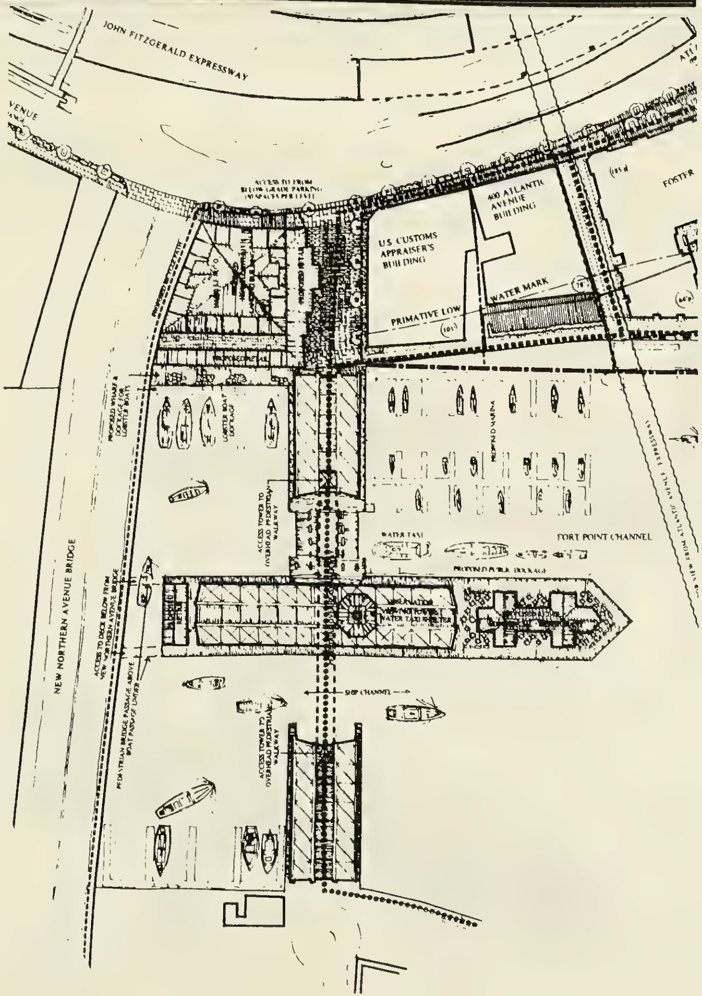
	Bridge	Structural Need*	Estimated Construction Start*
1.	Northern Avenue over Fort Point Channel	Replacement	1987
2.	Congress Street over Fort Point Channel	Deck Replacement, Reinforcing	1986
3.	Summer Street over Fort Point Channel	Deck Replacement, Repair	1987-1988
4.	Summer Street over Railroad Yards	Deck Replacement, Reinforcing	1987-1988
5.	Summer Street over A Street	Repair	1987-1988
6.	Summer Street over B Street	Repair, Later Replacement	1987-1988
7.	Summer Street over C Street	Replacement	1987-1988
8.	Summer Street over Reserved Channel	Deck Replacement, Reinforcing	1987-1988



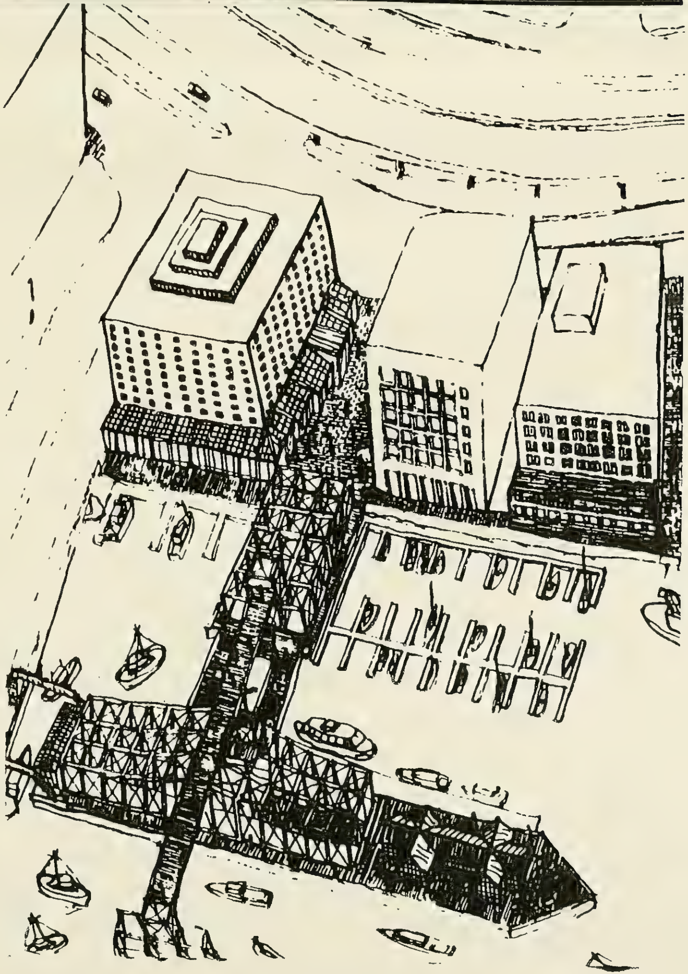
BRIDGE TRAIL

Old Northern Avenue Bridge Renovation

The proposal to build a new Fixed Span Bridge across the Fort Point Channel, approximately one hundred feet south of the existing Old Northern Avenue Bridge, thus abandoning use of this bridge for vehicular traffic, affords the opportunity for forgoing a major pedestrian link between Downtown Boston and South Boston with its proposed Fan Pier Development and other major developments that are about to begin plus other developments proposed to take place in the future. We suggest that the so-called Hooks Lobster property at the south corner of Atlantic Avenue and the Northern Avenue Bridge, adjacent to the proposed new Fixed Span Bridge, be redeveloped. Hooks Lobster should be developed for permanent water-oriented use, adding more publicly active retail uses to the ground floor, as well as, adding additional stories either for mixed use, i.e., office, residential or for all residential, mirroring the height of the adjacent U.S. Appraisers Stores Building. This new proposed Hooks Lobster Development could become a transitional "Gateway", the beginning of an attractive active public pedestrian walkway connection and a prominent HARBORPARK link which now can be forged between the South Boston and Downtown Boston peninsulas.



The Old Northern Avenue Bridge could, and should, become a unique open space for pedestrian use tied in with a proposed Northern Avenue Bridge Observation platform below, which is a Harbor Water Taxi Terminal part of the new Harbor Commuter network being promulgated by various State and City agencies. As part of this proposed Observation Platform, the construction of a new 'up in the air' pedestrian bridge would connect the opened sections of the old Northern Avenue Bridge with the stationary central section, thus linking Downtown Boston with South Boston. This new 'up in the air' pedestrian bridge would span the Fort Point Channel and thus would not interfere with large boat activity at the mouth of this very important water body.



New Bridges

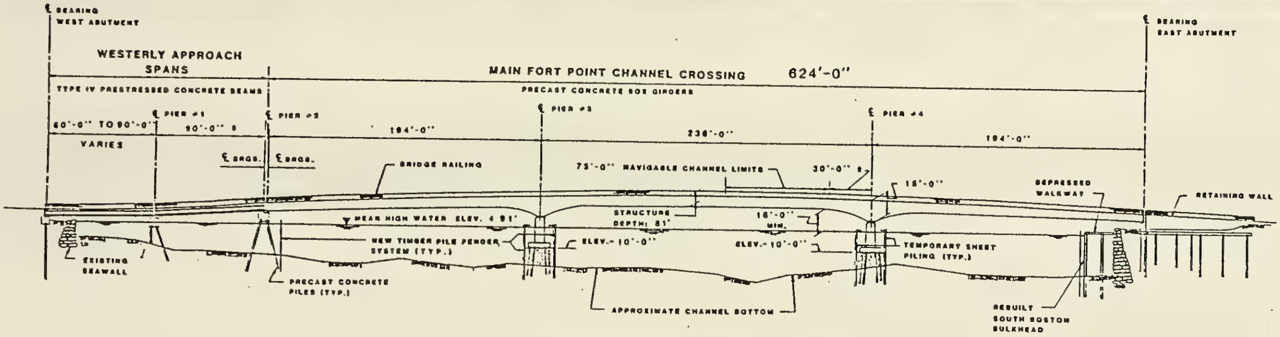
There are several proposals for new bridges in the Fort Point Channel area. Most of them to be built in the 1988-1992 period.

- New Northern Avenue Bridge

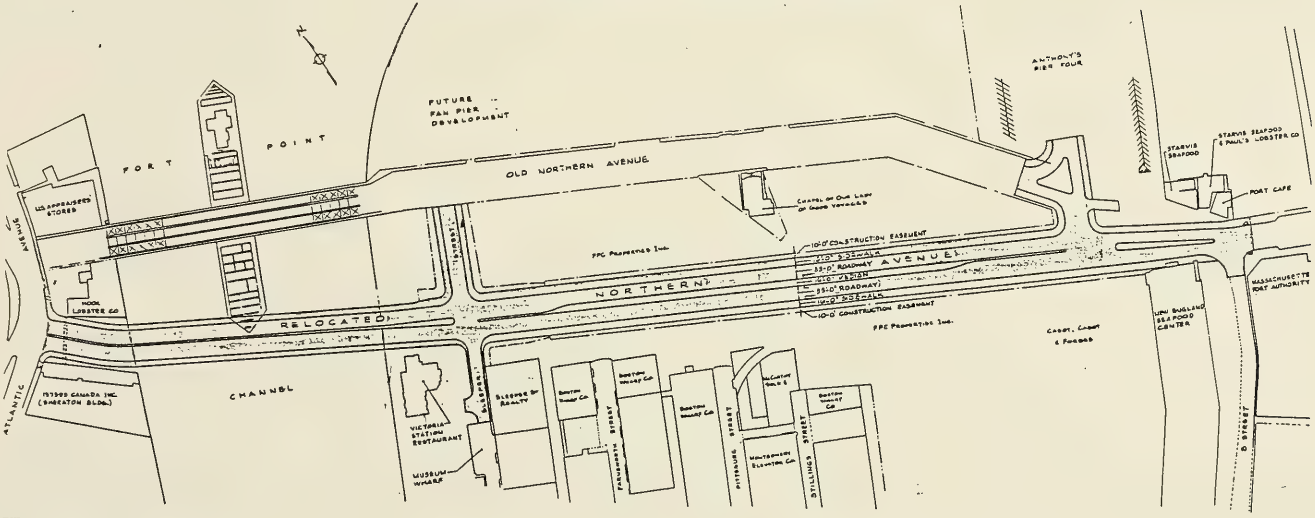
  Location of a new Northern Avenue and Bridge approximately 150 feet north of the existing old Northern Avenue Bridge. The main channel crossing will be a fixed three-span structure over the Fort Point Channel. The existing navigable channel is preserved and a vertical clearance of 16 feet will be maintained above mean high water elevation. The bridge will consist of two travel lanes and a shoulder in each direction separated by a 6-foot wide. 15-foot sidewalks will be provided on each side of the new bridge.

- Fan Pier Bridges

  Four new bridges are included as part of the 4.8 million square feet development proposal for the Fan Piers. A new east-west canal will be created that will be spanned by two vehicular bridges that extend Farnsworth and Pittsburg Streets across the canal. Also, two pedestrian bridges will cross the canal to extend the Harborwalk along the Fort Point Channel's edge across the new channel. All four bridges will be different in character but interrelated by the canalwalk that runs along the proposed canal.

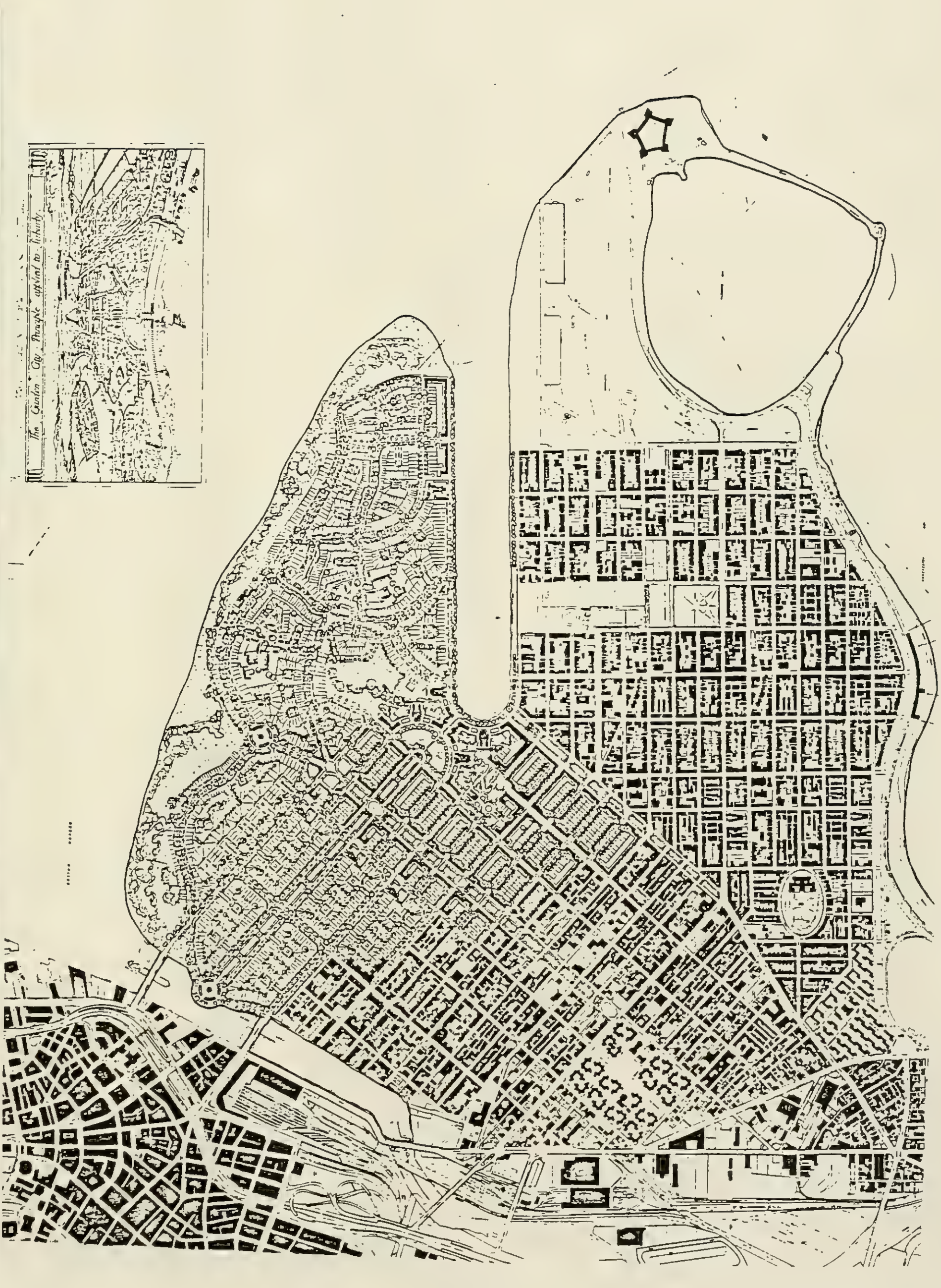


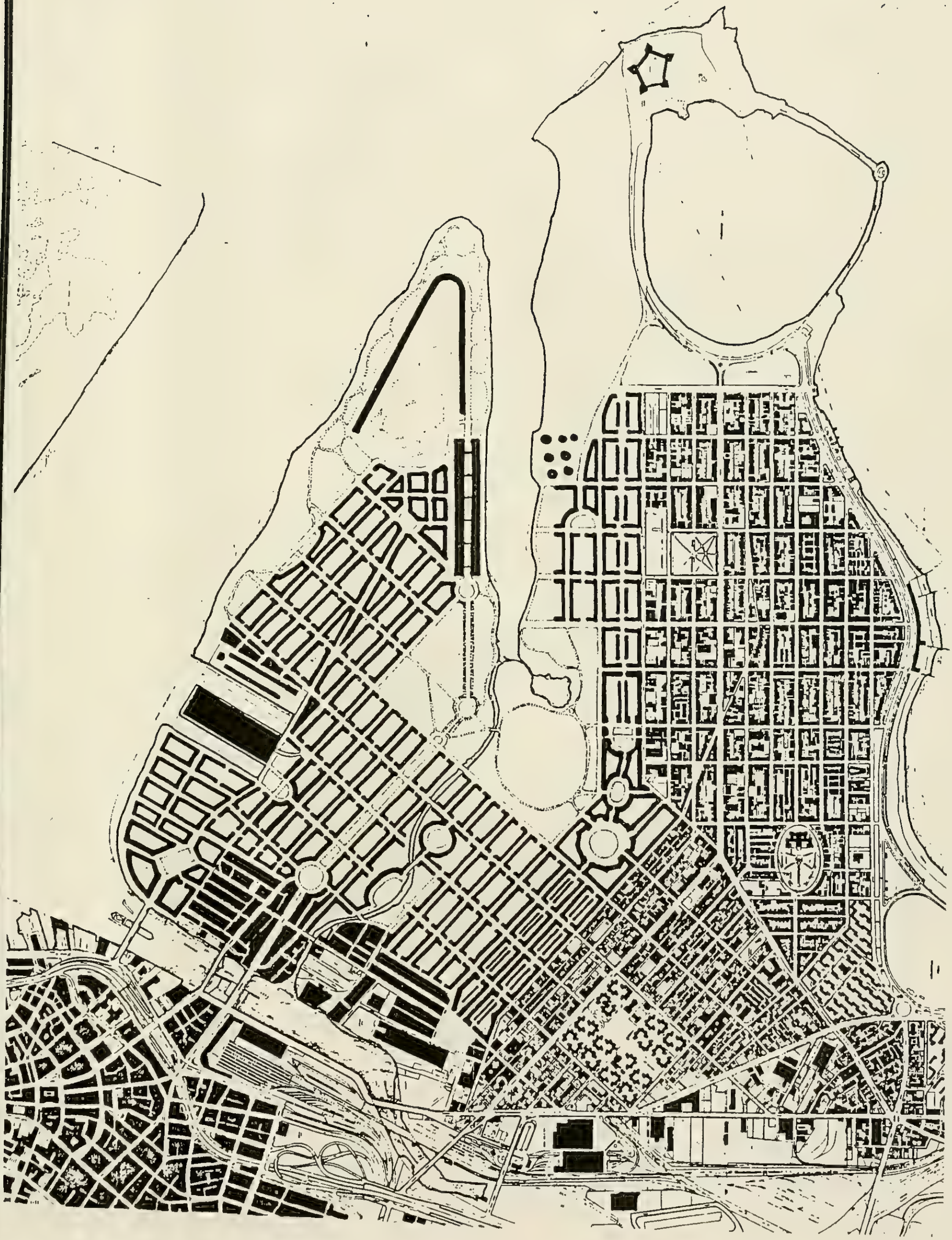
RELOCATED NORTHERN AVENUE BRIDGE PROFILE



COLLAGE VISIONS OF THE FORT POINT CHANNEL

Following are collages of different cities superimposed over the Fort Point Area; this is part of the work developed by Urban Design students at Harvard University during the Spring of 1986. The studio teacher, Alex Krieger served as advisor to this study and therefore the Boston Redevelopment Authority staff had an opportunity to participate in the review of some of their ideas for the Fort Point Channel.





BIBLIOGRAPHY

1. Arena Convention Center for the Boston Wharf Company Site - Fort Point Channel; Pietro Bellushi. 1977.

2. Arena Sites Report; BRA; October 1977.

3. Boston Downtown Waterfront Project; Boston Educational Marine Exchange, Felicia Clark, Project Director; Lane/Frenchman, Inc., Urban Design Consultant.

4. Boston Downtown Waterfront Project Phase II Report, Parsons, Brinckerhoff, Quade & Douglas, Inc./with Boston Downtown Waterfront Project Staff, February 1981.

5. Boston Fish Pier, Application for Title 1 Funding for Rehab.

6. Boston Harbor, A Plan for Boston Harbor, Booklet and Poster Boston Educational Marine Exchange.

7. Boston Harbor: Challenges and Opportunities for the 1980's; BRA/Sasaki; 1979.

8. Boston Navy Shipyard & South Boston Naval Annex, Mayor's Office of Commerce and Manpower.

9. BMIP, Economic Development Plan for Boston Marine Industrial Park, Economic Development Industrial Commission, July, 1976.

10. Boston Wharf Company Buildings, Rehab Study, BRA, 1977.

11. Bridge Rating Summary for the Congress Street Bridge over Fort Point Channel", Commonwealth of Massachusetts, September, 1979.

12. Change and Growth in Central Boston; Greater Boston Chamber of Commerce and Boston Society of Architects; May 1981.

13. City Edge: Fort Point Channel; The Fort Point Channel Area Study Group, BRA; December 1972.

14. Commonwealth of Massachusetts, Metropolitan District Commission, Combined Sewer Overflow, (C50) Project, Inner Harbor Facilities Plan, Fort Point Channel CSO Facility, O'Brien and Gere Engineers, Inc., May 2, 1980.

15. Commonwealth Pier Five, Skidmore, Owings & Merrill, May 1981.

16. Commonwealth Pier Planning and Architectural Study, Jung Brennan.

17. Commonwealth Pier Five, Draft Environmental Impact Report, Commonwealth Pier Five, Skidmore, Owings, & Merrill, July 1982.

18. Containerport Study, Frankel & McGuire, December 1974.

19. Fort Point Channel, Boston Tomorrow, Fort Point Channel Area District Study, Progress Draft, June 28, 1984.

20. Fort Point Channel Redevelopment Area One; Pietro Bellushi, Inc., and Jung/Brannen Associates, Inc.; December 15, 1981.

21. Fort Point Channel: A Boston Educational Exchange Proposal for a New Inner Harbor Community (Poster).

22. Fort Point Channel: A Planning and Development Study; BRA, December 1977.

23. Fort Point Channel: A Study for the Development of Fort Point Channel, South Bay and Adjacent Areas; Port of Boston Authority; May 15, 1950.

24. Fort Point Channel Awaits; Harvard University Graduate School of Design, June 1978.

25. Fort Point Channel Urban Design Guidelines; Harvard University Graduate School of Design, 1978.

26. Fort Point Channel Urban Design and Planning Studies; Harvard Graduate School of Design; June 1978.

27. Fort Point Channel, In Transition: Fort Point Channel; Harvard University Graduate School of Design, 1978.

28. Fort Point Evolution of and Urban Area; Harvard University Graduate School of Design, Spring 1978.

29. Fort Point Channel - Feasibility Study Basic Design Report and Environmental Elements: The Northern Avenue Bridge and its Approaches; Universal Engineering Corporation; 1973.

30. Fort Point Channel Project - Public Benefit from Public Investment, Greater Boston Chamber of Commerce (Felicia Clark - Community Facilities Planning Group, Inc.), June 1983.

31. Fort Point Channel Economic Development Plan for the Fort Point Channel Industrial Park; EDIC; 1978.

32. Fort Point Channel - Urban Design Proposal; Harvard University Graduate School of Design, Spring 1978.

33. Fort Point Channel - Investigation and Study of the Feasibility of Filling South Bay and Fort Point Channel and the Utilization of the Filled Area, Port of Boston Authority; March 1949.

34. Fort Point Channel - The Leather District and the Fort Point Channel - The Boston Photo Documentary Project; Susan R. Channing, Ed.; 1982.

35. Fort Point Channel, "Soles and Ice: Trades of the Fort Point Channel", Martha Davidson, June 1980.

36. Fort Point Channel - A Sourcebook and Workbook for Fort Point Channel Urban Design Studies; Sandra Swaile, BRA; 1983.

37. Fort Point Channel - Street as Structure, An Approach to the Incremental Development of Fort Point Channel; Darlene Powers, M.I.T.,; 1979.

38. Fort Point Channel - Demonstration of Design Potential, Fort Point Channel and Summer Street Bridges and Grade Changes, Boston Redevelopment Authority Grant Application Submitted to the NEA (Paper), May 1984.

39. Harborpark, A Framework for Planning Discussion, Boston Redevelopment Authority, October, 1984.

40. Harborpark, Interim Design Standards for the Inner Harbor, Boston Redevelopment Authority, (Draft) November 20, 1984.

41. Northern Avenue, Replacement of Northern Avenue Bridge and its Approaches Over Fort Point Channel, Feasibility Study, Environmental Assessments and Basic Design; Universal Engineering under contract to MDPW; 1974.

42. Northern Avenue, Supplementary Report, Scheme C-3 Modified, Replacement of Northern Avenue Bridge and its Approaches Over Fort Point Channel; 1977.

43. Northern Avenue Bridge Replacement Study: Supplementary Report; Fay, Spofford & Thorndike, Inc. and Wallace Floyd, Ellenzweig, Moore, Inc. (Sponsored by BRA and Massport); January 1980.

44. Northern Avenue, A Proposal for the Reuse and Design of the Old Northern Avenue Bridge, A Design Demonstration Grant Application to the NEA by the BRA, (paper), May 1985.

45. Northern Avenue, Draft Cooperation Agreement Between the City and Abutters Concerning the Layout of New and Existing Northern Avenue and Adjacent Private Development Parcels, January 17, 1984.

46. Seaport Access System - Environmental Foundation for Project Development; BRA and Massport; February 1981.

47. Seaport Access System/Preliminary Environmental Assessment; Fay, Spofford & Thorndike, Inc. & Wallace, Floyd, Ellensweig, Moore, Inc. (jointly sponsored by BRA and Massport); June 1980.

48. Seaport Access System: South Boston Summer Street Bridges, August 1982.

49. South Boston Seaport Access Road: A Report on Alternative Alignments; BRA; February 1975.

50. South Boston, Transitional Zone, Neighborhood/Industrial, Boston Redevelopment Authority, (Paper) July 1985.

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